The Consulting Engineer's Role . . . . . Pg. 12

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Arkla Seeks More Multiple-Housing, Builder Market

LITTLE ROCK, Ark.—Reaching for greater penetration of the air conditioning market and especially reaching for the builder and multiple-housing market, Arkla Air Conditioning Co. announced two important decisions:

● "An across-the-board price reduction of $100 on all residential-type central cooling-heating units, effective Aug. 4," according to W. R. Stephens, Arkla president.

● The proposed introduction, during 1962, of "revolutionary gas-fired 2 and 3-ton central heating-cooling units which will be priced to enable the gas industry to compete in the builder and multiple-housing market."

Arkla presently markets a line of "Sun Valley" residential-type gas absorption heating-cooling units which range from 3.5 tons through 6.4 tons. "Arkla will bring out additional units in the intermediate range of residential usage during 1962," Stephens said.

"The present 5-year warranty in effect on all Arkla units will apply to all models introduced in 1962."

(Continued on Back Page, Col. 1)

'Fast Nickels . . . Not Slow Dollars'

Republic Answers Questions about Plans, Mathes Warranty Situation

By Phil B. Redeker and Frank J. Versagi

DALLAS—Republic Air Conditioning Div. of Republic-Transcon Industries, Inc., which came into being when Republic-Transcon took over the Mathes Div. of Glen Alden Corp., is "very definitely going to be in the air conditioning business," according to Milton J. Stevens, board chairman.

Stevens declared that "we have merchandising plans underfoot which will challenge the industry, a merchandising concept based on fast nickels, rather than slow dollars."

Together with Robert Starnes, former president of Mathes who now heads the new air conditioning company, the board chairman insisted that Republic-Transcon will assume responsibility for warranties on Mathes equipment still in the warranty period, "where the claim is valid on the basis of the written terms of the warranty."

"But we're closing the sluice gates on all the unwarranted claims, on all the units out of other makes that they try to slip in on us, and on all the crooked tactics of those who are trying to get by with phony stuff on these warranties," stated Starnes. (There have been reports in the field that Republic-Transcon was not honoring Mathes warranties.)

Stevens and Starnes made public a letter (published at the end of this story) which outlines Republic-Transcon policy on warranty claims on Mathes equipment. This letter has been sent to dealers and others inquiring about warranties, and was

(Continued on Page 29, Col. 1)

Since Republic-Transcon Industries acquired Mathes Div. of Glen Alden Corp. in June there has been considerable speculation as to the company's plans in the air conditioning field, and some questions were raised about the warranty obligations on Mathes air conditioners. Last week, in a four-way telephone interview with Milton J. Stevens, board chairman of Republic-Transcon Industries, Inc., and Robert B. Starnes, former Mathes Div. president and now head of the Republic Air Conditioning Div., Editorial Director Phil Redeker and Editor Frank Versagi got the answers to these questions, and they are published in the story appearing in the adjoining column.

Fallout Shelter Eligible For Rehabilitation Loan

WASHINGTON, D. C.—FHA Commissioner Neal J. Hardy has ruled that fallout shelters will be an eligible item for insured loans under the agency's new rehabilitation program.

The rehabilitation loans included in the 1961 Housing Act provide for FHA insurance on loans up to $10,000 with maximum terms of 20 years and maximum interest rate of 6% for rehabilitation of individual homes.

Inside urban renewal areas

(Continued on Back Page, Col. 4)

IRS Set To Apply Excise Tax On Self-Contained Centrals

WASHINGTON, D. C.—The U.S. Internal Revenue Service reportedly is preparing to issue an interpretation of the Federal excise tax law which would conceivably impose the 10% tax on all self-contained air conditioning units (rather than just room units), regardless of size or application.

What's more, the ruling may be made *retroactive to Dec. 1, 1959.*

The proposed ruling came about in the following manner:

When the Internal Revenue Service put into effect a new regulation in the Fall of 1959, which broadened the imposition of the tax on "self-contained air conditioning units" to cover all room air conditioner units (it had previously been interpreted to cover units under 1 hp only) there was some discussion that the IRS might try to apply the tax to all self-contained units, no matter what the size or application.

There was no indication at the time that IRS would push for this. However, the suggestion was made that one company submit a fairly standard model of a self-contained air conditioner, other than a unit obviously designed as a window unit, "designed for the direct delivery of conditioned air," as spelled out in the new regulation.

General Electric Co.'s Air Conditioning Dept. submitted such a unit early in December of 1959, together with a petition stating why such units should not be covered. The Air-Conditioning & Refrigeration Institute

(Continued on Back Page, Col. 1)

Rep. Rains Says

1961 Housing Act To Benefit Heating And Cooling Sales

By George M. Hanning

DETROIT—Provisions of the new National Housing Act governing home improvement loans open a wide field for sales of residential heating and air conditioning systems, Rep. Albert G. Rains, Alabama Democrat, and chairman of the House committee on housing, declared in an exclusive interview with the NEWS here recently.

Rep. Rains, one of the primary authors of the 1961 Housing Act, estimated that the liberalized provisions of the Act would stimulate housing starts to a 1,300,000 unit level during the next 12 months and should increase the rate to 2,000,000 starts annually thereafter.

Rep. Rains also explained the legislative intent on extending Title II home modernization loans to $10,000 and 20 years to pay with maximum annual in-

(Continued on Back Page, Col. 2)

NWAHACA Plans Steps To Improve Industry Relations

CLEVELAND — Four major steps designed to achieve a closer working relationship between all segments of the industry will be taken Sept. 1 by the National Warm Air Heating & Air Conditioning Association.

Harry C. Gurney, president, identified the four steps as:

1. Division of the United States into 11 regions, each to be served by a Regional Dealer's Council, representing NWAHACA members located in the region. (See map). Regional wholesaler councils will also eventually be established.

2. Formation of a National Dealer's Advisory Council composed of the chairmen of the 11 regional dealer councils.

3. Formation of an All-Industry Cabinet comprising three representatives of the National Dealer's Advisory Council, three wholesaler member representatives, and three manufacturer member representa-

(Continued on Page 26, Col. 3)

Penn Controls Acquires Baso

GOSHEN, Ind. — Penn Controls, Inc. has acquired the business, goodwill, and principal operating assets of Baso, Inc., subject to approval by Baso stockholders, Ralph S. Penn, president of Penn Controls, Inc., and H. E. Toelle, president of Baso, Inc. have announced jointly.

It is contemplated, the announcement said, that Baso and its operating subsidiary, Vultel, Inc. will become a division of Penn on Sept. 1 with all manufacturing facilities of Baso and Vultel continuing in operation at Milwaukee and Watertown, Wis. under the Baso name.

The announcement said the purchase price involves cash and debentures. Reportedly the price

(Continued on Page 4, Col. 5)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Memo to Vacationers

A carload of light-hearted picnickers drove down a winding road to their favorite outdoor rendezvous. But party spirits drooped when the site came into view.

Crumpled napkins and dirty paper dishes, fruit skins, sandwich wrappings, bottles, cans, and other empty containers covered the tables and overflowed onto the grass—indisputable proof that the litterbug had been stomping on the old camp grounds!

Summer, you know, is the season he likes best. Warm, sunny days lure him outdoors to city parks and pools, beaches, picnic grounds, and camping areas. And those long holiday weekends and "two weeks with pay" enable him to take to the road with abandon.

Who are these trash-tossing pests?

Almost anyone. And far too many. Individual thoughtlessness is a primary cause of this bad habit.

What's more, this same bad habit makes it necessary for American taxpayers to clean up after themselves at a cost of more than $50 million a year—for litter removal from primary highways alone!

In one year, litter was the main cause of more than 57,000 building fires. Debris-burning

(Continued on Page 10, Col. 1)

In Heating-Cooling Field

NAPC Blames National Agreement Labor Contracts for Job Losses

KANSAS CITY, Mo. — National agreement labor contracts are causing some members of the National Association of Plumbing Contractors to lose out on much of the air conditioning and heating installations they might otherwise obtain, G. Allen Briggs, NAPC president complained at the national convention of the United Association of Journeymen Plumbers and Pipefitters here recently.

Briggs appeared at the union convention to explain why NAPC has adopted a resolution at its recent national convention in Detroit opposing national agreement labor contracts.

His talk was in reply to an address by Peter T. Schoemann, president of UA, who expressed surprise at the NAPC resolution and hope that it did not represent a majority opinion.

Briggs explained that NAPC referred "primarily to any labor agreement or arrangement whereby an out-of-town contractor or employer can come into a local situation and bid a job under more favorable labor cost conditions than the local contractor."

He specifically cited such service contract agreements with Johnson Service Co., Minneapolis-Honeywell Regulator Co., and Powers Regulator Co.

"We are missing out on much of the air conditioning and heating installations which many of our member contractors feel we could obtain if they could bid and work under national agreement conditions in fair competition with the national agreement contractors," Briggs asserted.

"Lest you think that this field of heating and air conditioning is unimportant to us," Briggs continued, "let me remind you that 85% of our contractors are engaged in heating and approximately 50% in cooling.

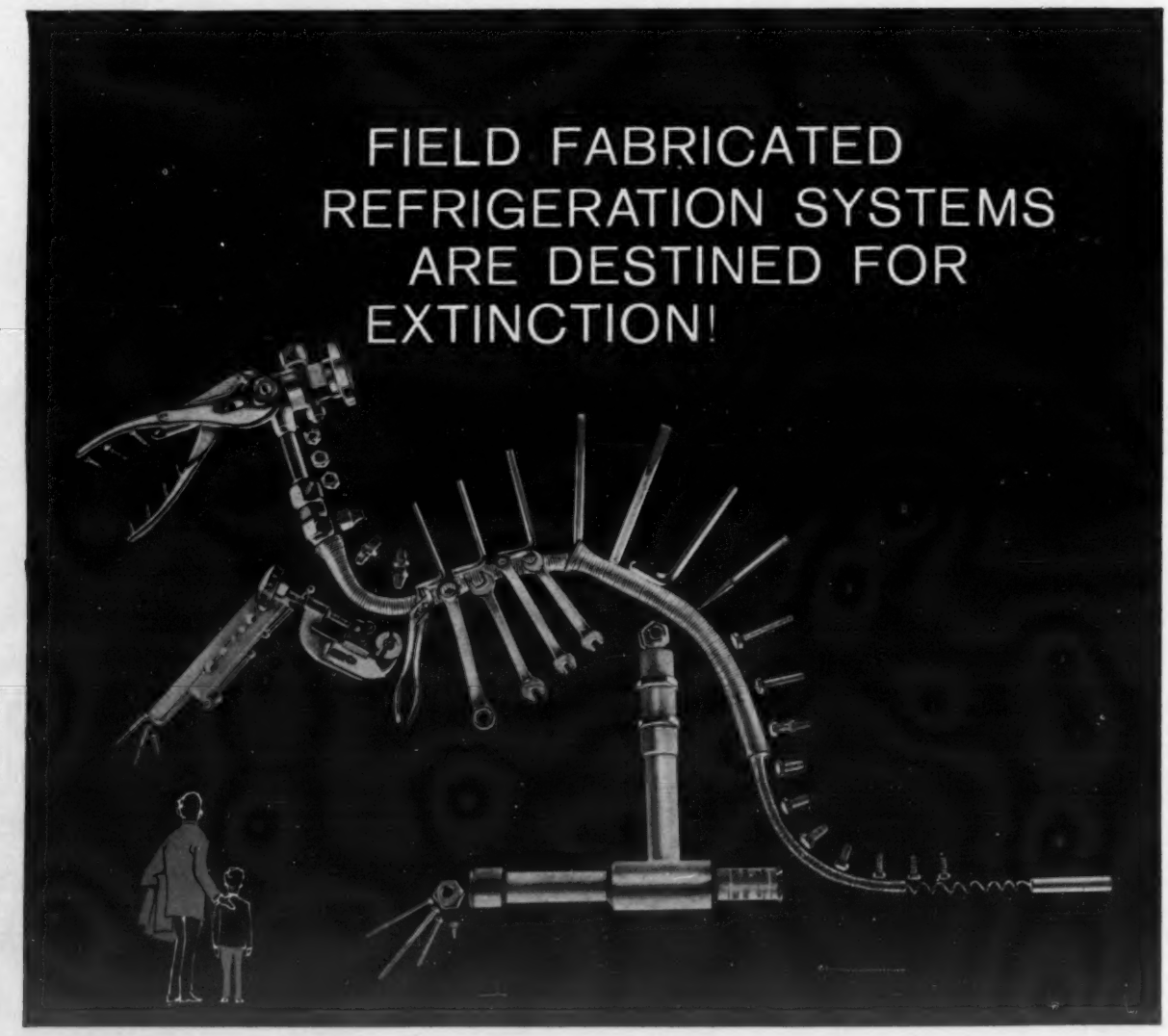
"Also more than 40% of every dollar of materials purchased by our contractors is for either heating or cooling equipment.

"Both we contractors and your members who are employed by us have a very direct interest in channeling this work along better lines than is being done at present under national agreement conditions," he declared.

Briggs also expressed to the union NAPC's opposition to the 32-hour week and firm commitment to the 40-hour week, its worry over possible union discrimination in hiring on Federal construction projects because it is the contractor, not the union, that will be the first to "take it on the chin," and its opposition to the situs picketing bill.

Represents Day & Night

LA PUENTE, Calif.—Walter F. Morris Co. of Boston has been appointed to represent Day & Night Mfg. Co. in New England to the plumbing and heating trade.



NEW KRAMER THERMOBANK-COMPRESSOR *Systems make field-fabrication as obsolete as dinosaurs and open a new era of opportunity in refrigeration.*

Gone is expensive, time-consuming and inefficient field-fabrication of refrigeration systems and with it your major headaches —shortage of skilled manpower and uncertain costs! Kramer's THERMOBANK-COMPRESSOR SYSTEMS are complete systems (high side and low side), factory engineered, instrumented, assembled, tested and run-in. For outdoor installations, they arrive on the job in all-weather aluminum housings, and "Winterstated" for year-'round automatic operation.

Requiring only connection of refrigerant lines and electrical service, they permit you to handle a much greater volume of business with your present skilled staff. Gone are costly delays for components; you get a complete Kramer System with a single order eliminating reams of paperwork. Kramer's System rating assures accurate predictable performance. Costs are predictable, too, since errors in assembly or labor and material estimates are obviated.

Your customers get a better buy and a better system incorporating Kramer pioneered features including the unique THERMOBANK re-evaporative defrost with all-season Winterstat control for any size job and any temperature level.

To learn how Kramer THERMOBANK-COMPRESSOR SYSTEMS can brighten your profit picture, request Bulletin C 484A.

KRAMER THERMOBANK-COMPRESSOR SYSTEMS

KRAMER TRENTON CO. Trenton 5, N. J.

48 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

BDSA Lists Export Opportunities

WASHINGTON, D. C.—Zero Electric Ltd., an importing distributor and manufacturers' agent handling refrigeration accessories and supplies in Great Britain, would like to purchase or serve as agent for accessories and supplies for commercial refrigeration plants, the Business and Defense Services Administration of the U. S. Department of Commerce reports.

The firm, located at 55 Brace St., Walsall, Staffs., wants compressors, condensers, expansion valves, evaporators, copper tubing, thermostats, fans, etc. for selling to manufacturers and distributors of commercial refrigeration.

A private company established in 1945, it is said to have a capital of £2,000.

BDSA also reports that Entreprise d'Installations Technique et de Construction, manufacturer's agent and retailer in Cotonou, Dahomey wants a general agency for all or part of the west African country to sell unit air conditioners and central air conditioning equipment and parts. The firm may be reached at Boite Postale 114, Cotonou, Dahomey.

Peter Hartman & Co. of Dortmund, West Germany wants to purchase self-service refrigerated display cases, refrigerating machines and accessories, evaporators, and switching equipment of all kinds. The importing distributor's address is 115 Muensterstrasse, Dortmund.

Kelvinator Vacation Cut Due to Sales Rise

DETROIT—Sales increases of Kelvinator appliances have caused American Motors' Kelvinator plant in Grand Rapids to reduce its annual vacation-inventory shutdown from three to two weeks, the company has announced.

The plant will be shut down this year from Aug. 21 to Sept. 5, according to George H. Beld, works manager.

Homer L. Travis, vice president in charge of Kelvinator sales, said July sales of Kelvinator major appliances were up 14.9% over July of last year and marked the fourth consecutive month in which sales have exceeded the year-ago period.

July dealer billings, he said, represented the second highest sales volume for any month since October, 1959.

Form New Firm To Lease Cab Coolers

BOSTON — Formation of a new company to handle the leasing of cab air conditioners to truck owners and fleet operators was announced here recently by David Housman, president of Automatic Radio.

The newly created firm, Automatic Leasing Co., will lease truck cab air conditioners manufactured by Vornado Truck Air Conditioner Div. of Automatic Radio. Headquarters of the new company will be at 122 Brookline Ave. here.

Borg-Warner Appeal Denied In Suit Against York-Shipley

YORK, Pa. — The United States Court of Appeals recently denied an appeal by Borg-Warner Corp. from the U. S. District Court's decision on the law suit brought by Borg-Warner against York-Shipley, Inc., the latter firm reported.

Borg-Warner sought reversal of the district court's previous decision sustaining York-Shipley's counterclaim respecting York-Shipley's rights to the name "York" for heating products.

The Court of Appeals also ruled that Borg-Warner should be enjoined from using York in connection with the sale of furnace products and that York-Shipley is entitled to its actual damages suffered as a result of the infringing use of York by Borg-Warner, according to the report.

The Court of Appeals remanded the case to the district court, which originally heard the case, for a recomputation of the $2,280,000 damages awarded to York-Shipley and a modification of the injunction so that Borg-Warner may continue to use heating coils or units in its air conditioning devices such as have previously been used by Borg-Warner and the air conditioning industry.

The original decision by the district court had enjoined Borg-Warner from use of York as a trade name or corporate name in the sale of heat generating products and ordered Borg-Warner to pay to York-Shipley, Inc. $2,280,000 for damages, an accounting of Borg-Warner's profits, costs, and reasonable attorneys' fees.

The Court of Appeals found that York-Shipley was first to use York in the sale of heating products and that at such time Borg-Warner's York Div. was only in the ice-making and refrigeration machinery business.

Furnace Shipments Improve In May

WASHINGTON, D. C.—During May, for the first time this year, manufacturer shipments of winter air conditioning units exceeded that for the comparable month of 1960, the U. S. Bureau of Census reports.

The 88,193 winter air conditioners shipped in May topped the 85,772 shipped in May, 1960. But shipments of 392,142 units for the first five months of the year still trailed the 403,307 shipped in the 1960 period.

Shipments of warm air gravity units continued their steady decline with 2,421 moved in May as compared with 2,723 in the same month last year. For the five months, shipments numbered 13,403 units as compared with 12,911 last year.

At the end of May, manufacturer inventories of winter air conditioners were 229,247 units as compared with 252,399 at the same date in 1960. Inventories of warm air gravity units totaled 16,167 as compared with 12,750 last year.

Trane To Expand Engineering Building

LA CROSSE, Wis.—Plans for a $700,000, 31,500-sq ft addition to The Trane Co. Engineering Building at 17th and Horton Sts. here was announced recently by the company.

The expansion will provide needed office space for engineering and administrative departments, officials said.

The additional space will be acquired by adding a second floor to the Engineering Building. The original one-story building was completed in 1956.

Major construction on the second floor will begin in mid-September. It is scheduled for completion early in 1962.

American-Standard Appoints John Bolt

DETROIT — Appointment of John W. Bolt as product manager, packaged heating and ventilating equipment, has been announced by John F. Tobin, vice president, marketing, for American-Standard Industrial Div.

J. W. Bolt

Bolt will be responsible for future planning and product development of packaged heating and ventilating merchandise products as well as electronic cooling equipment and small packaged blowers for special air moving applications.

He has been a packaged blower specialist since 1957.

Burnell Sets Up Lab To Develop Unusual Electronic Filters

BOSTON — A new research laboratory to develop electronic filters of unusual properties built in unconventional ways was established here recently by Burnell & Co., Inc.

Burnell is a manufacturer of electronic filter networks and delay lines located at Pelham, N. Y.

Dr. Ernst A. Guillemin, vice president and director of research for Burnell, will head the laboratory, which will be formally dedicated in the fall.

"We have at our disposal scientific know-how that hasn't been tapped yet," Dr. Guillemin said, "and expect that applying it to our research will result in more sophisticated filters."

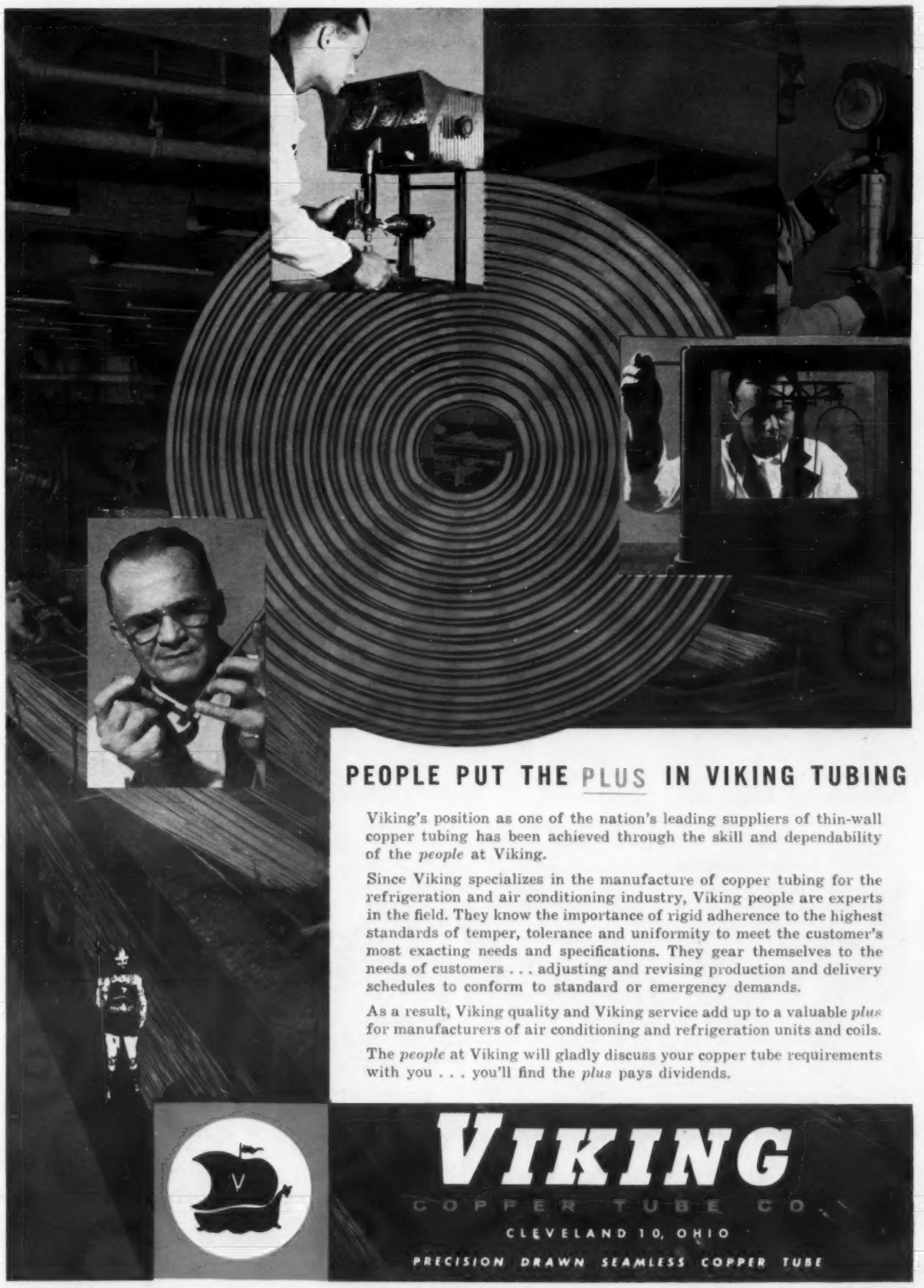
Acme Heat Exchanger Post Goes To Brant

JACKSON, Mich. — Appointment of Russell E. Brant to the newly created position of manager-special heat exchanger products for Acme Industries, Inc., is announced by P. A. Weatherwax, executive vice president.

R. E. Brant

Brant brings to his new post 10 years' engineering, design, and development experience in the fields of heat transfer and fluid flow at high and low temperatures and pressures.

He comes to Acme from American Radiator & Standard Sanitary Corp.'s Industrial Div., Buffalo.



PEOPLE PUT THE PLUS IN VIKING TUBING

Viking's position as one of the nation's leading suppliers of thin-wall copper tubing has been achieved through the skill and dependability of the *people* at Viking.

Since Viking specializes in the manufacture of copper tubing for the refrigeration and air conditioning industry, Viking people are experts in the field. They know the importance of rigid adherence to the highest standards of temper, tolerance and uniformity to meet the customer's most exacting needs and specifications. They gear themselves to the needs of customers . . . adjusting and revising production and delivery schedules to conform to standard or emergency demands.

As a result, Viking quality and Viking service add up to a valuable *plus* for manufacturers of air conditioning and refrigeration units and coils.

The *people* at Viking will gladly discuss your copper tube requirements with you . . . you'll find the *plus* pays dividends.

VIKING
COPPER TUBE CO.
CLEVELAND 10, OHIO
PRECISION DRAWN SEAMLESS COPPER TUBE

Westinghouse 1½-Ton Conditioner Attaches Directly to Outside Wall

STAUNTON, Va.—A 1½-ton air conditioner unit which attaches directly to the outside wall of a house was introduced recently by Westinghouse Electric Corp.

The new "WhispAir," which will carry a suggested list price of $656, is similar to a heat pump unit introduced earlier this year which offers a central system for both cooling and heating.

By mounting the cooling unit on a wall, the time and cost of installation are greatly reduced, it was reported by Raymond K. Serfass, manager of the Westinghouse Air Conditioning Div. here.

The WhispAir unit, which can be used either singly or in multiples for increased capacity, supplies 18,000 Btuh.

Measuring about 6 ft high, 2 ft wide, and 1 ft deep, the cabinet of the cooling unit projects about the same distance from a wall as the overhang of an average roof. Brackets support the unit.

The outside panel is removable, exposing all major components and thus providing easy access for maintenance. The aluminum cabinet can be painted to match the color of the wall on which it is mounted.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

FHA To Approve Title I Loans for Through-the-Wall Units for Hotels

WASHINGTON, D. C. — The Federal Housing Administration will approve Title I loans for through-the-wall air conditioners in hotels and motels if they are fastened in place in such a manner as to become a part of the realty.

Announcement of this change in eligibility was made last month by C. W. Starr, FHA assistant commissioner of field operations. In a letter to all FHA field offices, he wrote:

"An air conditioning unit which is installed in an existing structure used as a hotel or motel will be eligible for Title I financing if an opening is made through an exterior wall of such structure and the air conditioning unit is placed in such opening and securely fastened in place in such a manner as to become a part of the realty.

"Residential installations of this kind have been eligible since June 28, 1957.

"Air conditioning units placed in windows continue to be ineligible for all types of structures."

Connor Engineering Names Milwaukee Rep.

DANBURY, Conn. — Connor Engineering Corp., manufacturer of "Kno-Draft" air diffusers and high velocity valve attenuators and "Dorex" air recovery and purification equipment, has appointed Automatic Systems Co., South Milwaukee, as exclusive representative for sales and service in Wisconsin.

H. E. Rossell, Jr. Murray Wheeler

Int'l Heater Names Rossell, Wheeler

UTICA, N. Y.—Appointments of Henry E. Rossell, Jr. as vice president of sales and Murray Wheeler as executive vice president were announced recently by Harold F. Randolph, president of International Heater Co.

Rossell had been general sales manager of the American-Standard Air Conditioning Div. for the past eight years. He started in his new position on Aug. 1.

Wheeler, a great-grandson of the company's founder, has been with the heating and cooling firm since 1934. He becomes chief executive officer.

Albert I. Whiteley, sales head since 1957, has taken on other managerial responsibilities with the title of vice president.

Penn Buys Baso--

(Continued from Page 1, Col. 2)

is expected to be about $3,500,000.

Baso manufactures automatic controls, switches, and valves for gas burning devices in domestic and industrial markets. It pioneered the use of thermoelectricity in gas controls and for several years carried forward important research on thermoelectric materials. This research effort was transferred to Minnesota Mining & Mfg. Co. in 1957.

Baso's principal factory is located at 4000 W. Burnham St., Milwaukee. A foundry operation is located at 620 E. Nash St. The Vultel plant is in Watertown.

Penn manufactures a broad line of products for the refrigeration and air conditioning industry as well as industrial and home heating controls. It makes pressure switches for domestic water pumps and produces other air, oil, hydraulic, and electric controls for industry.

Its headquarters and factory are at Goshen. Other factories are at Syracuse, Ind., and Costa Mesa, Calif. Wholly-owned subsidiaries operate plants at Forest Park, Ill. and Toronto, Ont., Can. Overseas plants are in Argentina, the Netherlands, and Japan.

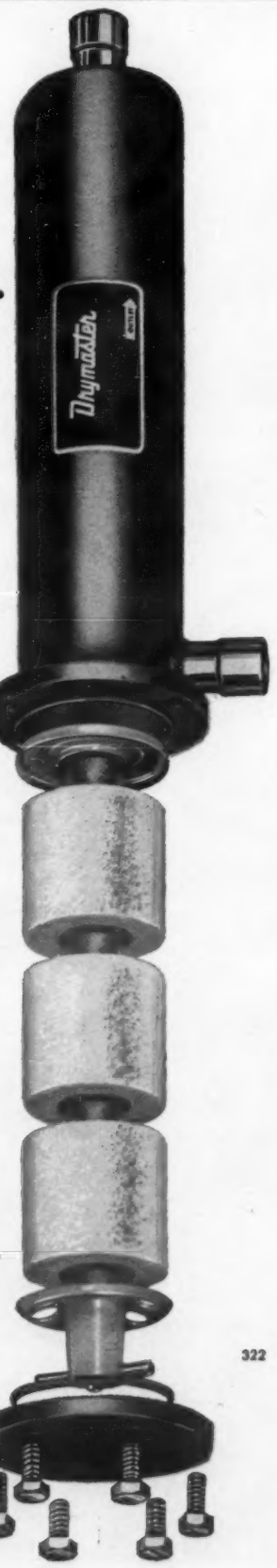
President Penn said the addition of Baso's products will complement and further diversify Penn's broad product line and will assure improved service to customers of both companies.

He estimates that annual sales volume of the combined companies will exceed $20 million and total employment will number about 2,000.

Revises Prices

PELHAM, N. Y. — American Brazing Alloys Corp., here disclosed that it has revised prices to distributors on its entire line of brazing alloys.

UNSURPASSED FILTERING AND DRYING with ADDED Convenience and Economy... It's the New Refillable Type Drymaster® Filter-Drier!



The superb, balanced filtering and drying performance of the new refillable type DRYMASTER comes from HI-FI Filter Block Desiccant: These fully activated, pressure molded briquettes quickly remove all harmful moisture, acid, sludge and micron-size foreign particles from the refrigeration system. HI-FI Filter Block Dessicant is non-dusting, non-channeling and is virtually unequalled in moisture adsorbing capacity. Its combination surface and internal depth filtering ability is unsurpassed by any other comparably sized drier in the field today.

And the new angle-type, refillable DRYMASTER Filter-Drier gives added convenience and economy, too. Once installed, the body shell of the Drier is in for the life of the system; only the desiccant is replaced. DRYMASTER Refillable Filter-Driers are designed for 5 ton through 165 ton capacities with ½" O.D. through 2⅛" O.D. solder connections. End fittings are made of copper for easier soldering.

HI-FI Desiccant Briquettes, protected against shock by fibre glass padding, come packed in vacuum sealed cans ready to be installed quickly, easily, with no connections or joints to remake.

Write today for Catalog R-159 . . . contains complete information on all Streamline Refrigeration and Air-Conditioning products.

322

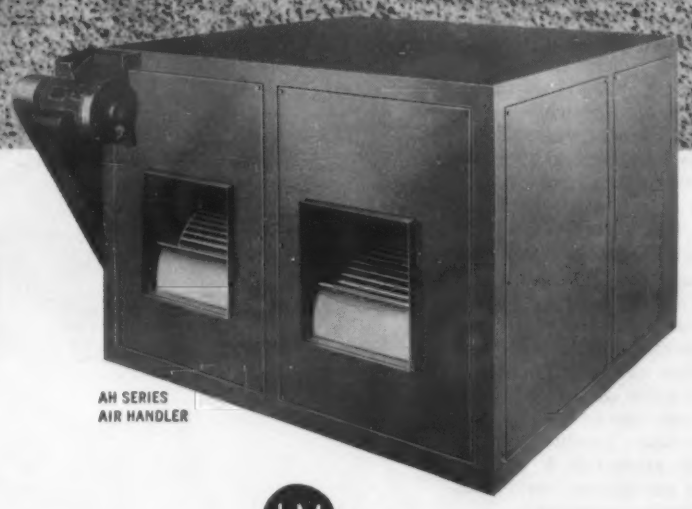
MUELLER BRASS CO.
PORT HURON 13, MICHIGAN
VAMPCO ALUMINUM PRODUCTS, LTD., STRATHROY, ONTARIO
Exclusive Canadian Representative for Mueller Brass Co.
Air Conditioning and Refrigeration Products

. . . I can get just the fin spacing, tonnage and CFM I want."

Now, Halstead & Mitchell gives you a choice of 6, 7, 8 or 10 fins per inch . . . makes it much easier to match a central fan-coil unit to a particular job or to meet specifications.

And look what else H&M offers: a selection of three coil face areas for each model; direct expansion or chilled water cooling coils (1 to 8 rows); hot water, standard steam or non-freeze steam heating coils (1 or 2 rows); cooling capacities of 3 to 92 nominal tons with 880 to 47,750 CFM; Turbu-Flo coils arranged for right or left-hand connections; horizontal or vertical mounting for discharge in any direction . . . and every accessory item you need to simplify your installation.

Why don't you check H&M Central System Air Conditioners? Call your wholesaler or write for Bulletin AHU-100. Halstead & Mitchell Co., Dept. H82 Bessemer Bldg., Pittsburgh 22, Pa.


AH SERIES
AIR HANDLER

HM
Halstead & Mitchell

Central System Air Conditioners · Air-Cooled Condensers · Cooling Towers · Water-Cooled Condensers

Export Representatives: Sabal-Kielmann, 15 Williams St., New York 5, N. Y.

Amana Chicago Branch Uses Ice Show To Help 'Thaw' Summer Sales Resistance

ALTOGETHER NOW pleads James Navarro as his partner Elick Lindon shovels up the stricken skater aided by two comely stars of the "Ice Varieties." Crowds estimated at over 2,000 flocked to Lindon's to see the ice show. The "Ice Varieties" is one of a continuing series of promotions planned by the Chicago branch of Amana for their dealers.

Professionals Draw Crowds for Dealers

CHICAGO — A professional ice show staged during a mid-July heat wave is helping "thaw" summer sales resistance and is showing a healthy increase of sales of Amana air conditioners, freezers, and freezer-plus-refrigerators here under a novel cooperative dealer promotion staged by the Chicago branch of Amana Refrigeration, Inc.

In a typical set-up, the front of Lindons Appliance & Furniture Store 2540 W. 63rd St., was transformed into an ice show rink.

The "Ice Varieties" show area consisted of a 24 by 20-ft ice rink against a backdrop featuring pictures of the performers and the Amana brand name. The entire store was decorated with colored ribbons and balloons.

The four skating stars drew laughter and applause from spectators of all ages as they glided through a variety of comedy and features routines. The crowd filled the front of the store and was four deep on the sidewalk outside.

'RESPONSE TERRIFIC'

"The response to this promotion has been terrific," agreed James Navarro and Elick Lindon, owners of the Chicago store. "We would recommend this type of promotion to any business that has an eye for the future and a desire to stimulate sales figures," they added.

For a successful program of continuing promotions, Navarro follows these axioms: plug a top product, draw heavily on the ideas and energies available from the manufacturer's personnel, and plan programs of interest and influence.

In another location, Bruno's Furniture & Appliance, 2900 N. Central, the "Ice Varieties" brought similar crowds and customer response. The ice show appeared at a total of five Chicagoland dealerships.

"We haven't figured out the exact dollar and cents increase in Amana sales during the promotion, but we certainly sold more Amana products than usual and attracted a greater number of customers," said Miss Corrine Bruno, manager.

"According to a survey, only a relatively small number of people in Chicago have seen the ice show, so this promotion served the dual purpose of providing a new experience for our neighbors and new customers for Bruno's," she added.

Borg-Warner Sales, Earnings Up for Second Quarter

CHICAGO — Second-quarter sales and earnings of Borg-Warner Corp. were better than those of the first quarter, in contrast to last year when the second quarter trend was down, Roy C. Ingersoll and Robert S. Ingersoll, chairman and president, respectively, said in the midyear report.

"June sales and earnings were better than a year ago, indicating the upward trend and confirming our belief that the business upturn is continuing," the company officers told shareholders in the report.

For the six months ended June 30, sales were $289,067,216, compared with $323,068,651 in the first half of 1960, when sales were at near-record levels. Earnings were $9,605,016 or $1.06 per common share, against $15,239,075, or $1.68 a share, in the corresponding period last year.

Second-quarter sales were $155,521,221 compared with $133,545,995 in the first quarter, while earnings climbed from $3,624,263 or 40 cents a share in the first quarter to $5,980,753 or 66 cents a share in the second quarter. The latter amount "approached second quarter of 1960," with earnings of $6,920,000 or 76 cents.

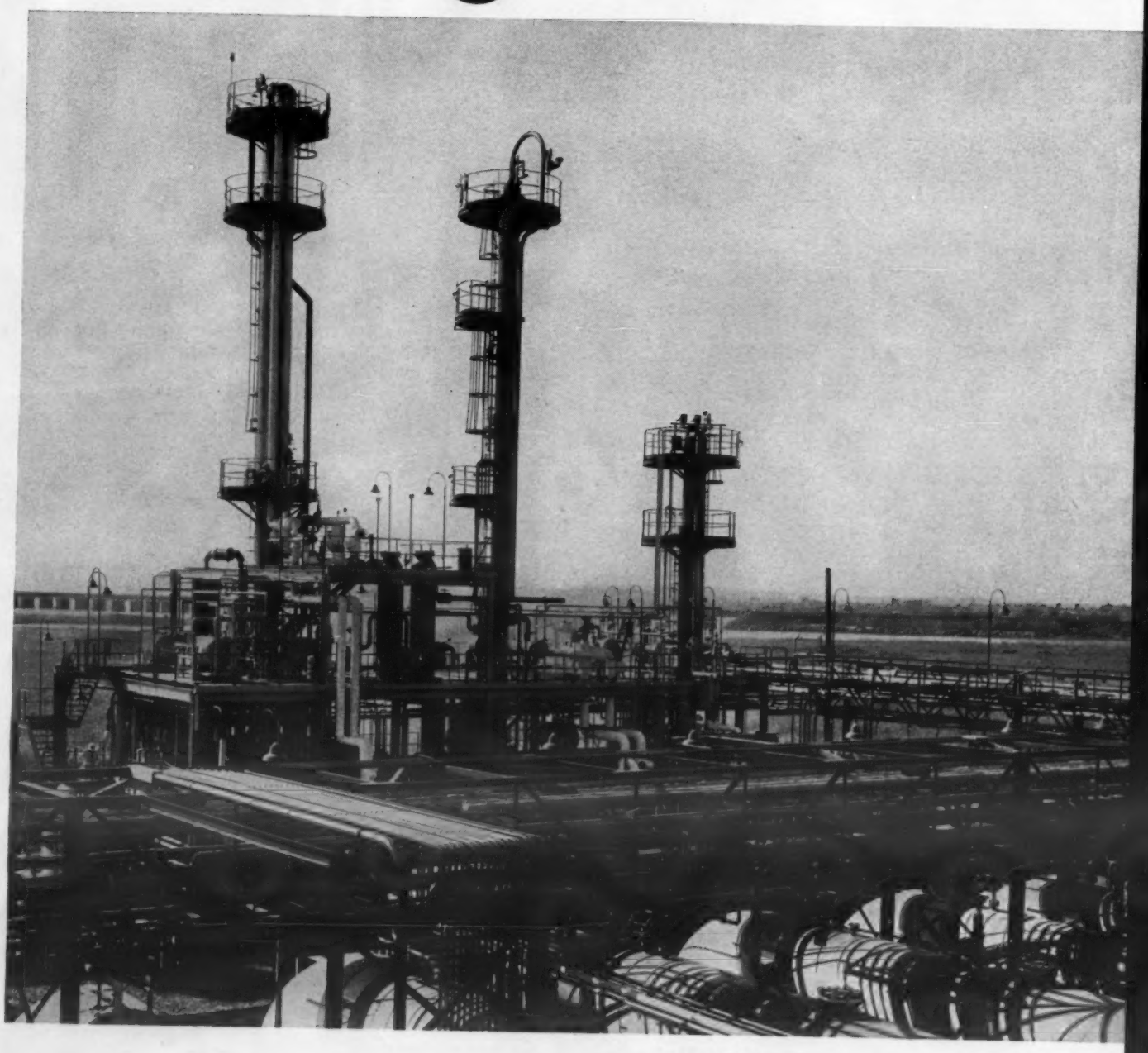
Room Unit Sales Up Slightly for 6 Months

NEW YORK CITY—Total industry sales of room air conditioners during the first six months of 1961 totaled 1,199,800 units, estimates the National Electrical Manufacturers Association.

This total was slightly higher than the 1,159,900 estimated for the same period of 1960. These figures are based upon expansion of data reported to the NEMA statistical department to cover the total industry sales.

The association estimated that June sales numbered 233,800, slightly under the 237,500 sold during June, 1960.

NOW 3 "GENETRON"®



Above: General Chemical's brand-new "Genetron" plant in Elizabeth, New Jersey has a capacity of more than 10,000 tons of "Genetron" per year. Its output will serve consumers throughout the Northeast. This large new plant is the third "Genetron" facility serving industry. It supplements production at Danville, Illinois, and Baton Rouge, Louisiana. These three highly efficient, big-capacity plants are three good reasons why General Chemical is your *dependable* source for highest quality fluorocarbon refrigerants and aerosol propellants. Be sure—always specify "Genetron."

Vere L. Hunt Elected President

Distribution Credit Corp. Set Up by Carrier To Handle Sales Financing

SYRACUSE, N. Y. — Carrier Corp. announced that Distribution Credit Corp., a wholly-owned subsidiary, will assume the responsibility for a sales financing program which has been conducted by the parent company since 1951.

In recent years the notes receivable outstanding under this program have amounted to some $40 million at the peak of the selling season, it was pointed out.

Vere L. Hunt, formerly treasurer of Carrier Corp., has been elected president and a director of Distribution Credit and will serve as its general manager.

Clarence E. Torrey, Jr., vice president, has been elected treasurer of Carrier, succeeding Hunt.

The board of directors of Distribution Credit includes the following senior officers of Carrier: Cloud Wampler, chairman; William Bynum, president; Charles V. Fenn and Melvin C. Holm, executive vice presidents.

Distribution Credit, incorporated under the laws of Delaware on Nov. 1, 1954, has until now been principally engaged in the making of intermediate term loans to qualified distributors franchised by Carrier.

In its expanded role, this finance company will handle substantial amounts of wholesale paper in the form of distributors' and major dealers' promissory notes secured by warehouse receipts.

The activities of Distribution Credit will supplement those of Appliance Buyers Credit Corp., a Carrier affiliate engaged principally in the financing of retail sales.

Worthington Names Alfred H. Cercone

HARRISON, N. J.—Alfred H. Cercone, East Orange, N. J., has been appointed manager, parts service, Marketing Services Group, Worthington Corp., it has been announced.

Manager, parts service with the corporation's Regional Engineering & Service Div. at Harrison headquarters since 1958, he is now responsible for parts service on Worthington equipment produced at all 20 manufacturing plants. He will also take part in market research and training activities of the organization.

IT'S A TRIP to Las Vegas for Mr. and Mrs. John Hansen, shown above. Mr. Hansen won the award in the Marley "Customer Certified" program. Hansen (center) is a sales representative of Johnson Refrigeration, Inc., East Moline, Ill. Presenting the award for Marley is John McKay, executive vice president of R. S. Stover Co., Marshalltown, Iowa.

* * *

Winner Announced In Marley 'Customer Certified' Program

KANSAS CITY, Mo. — The Marley Co. here has announced that John H. Hansen, a sales representative of Johnson Refrigeration, Inc., East Moline, Ill., is the winner of the first award in Marley's "Customer Certified" program.

Hansen sold and supervised installation of five Marley packaged cooling towers on the King Plaza Shopping Center. He returned a "Customer Certification" card on each of the five towers to Marley. On June 29, Marley officials watched Stanley Power, vice president of First National Bank in Kansas City, spin a wheel packed with Customer Certification cards and draw out Hansen's name.

The Marley program "is designed to promote better understanding of installation, operation, and maintenance procedures on the part of those who purchase cooling towers and air-cooled refrigerant condensers," it was explained.

"Every air conditioning and refrigeration contractor is eligible to participate in the program. After installation of a cooling tower, the contractor merely submits the owner's name and basic tower information on a card provided by Marley. The Marley company then mails the owner operation and maintenance information."

The Las Vegas trip is the first in a series of three awards to be made by Marley. The second will be a seven-day, all-expense vacation to Miami; the final award, an 11-day all-expense tour of Mexico.

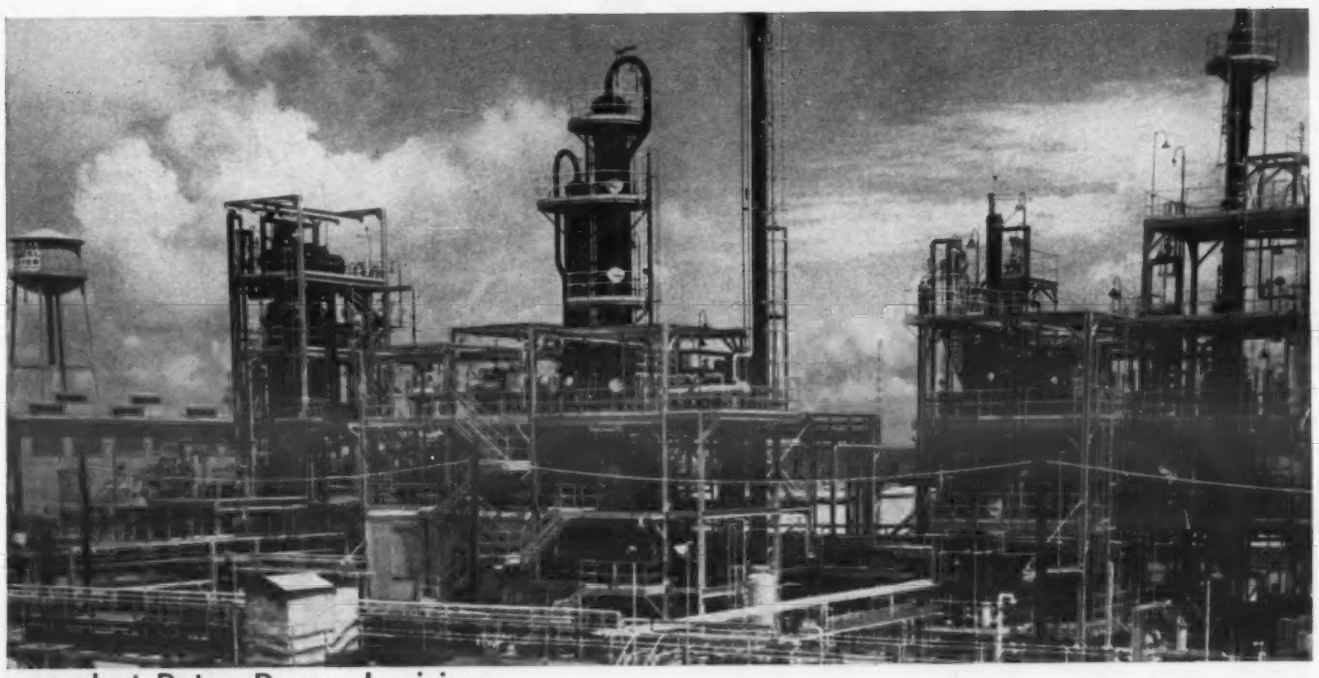
Contractors who have already submitted Customer Certification cards, as well as those who submit them in the future, will be eligible for the remaining two awards. Complete details on the Marley educational program are available from the company, its representatives, and its distributors.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

PLANTS TO SERVE YOU

◀ New "Genetron" plant at Elizabeth, N.J. now on stream

Other "Genetron" production centers at Danville, Illinois...



...and at Baton Rouge, Louisiana

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

Bell & Gossett Promotion Program Designed To Help Builders Merchandise Hydronic Homes

MORTON GROVE, Ill. — A new promotion program to help home builders merchandise hydronic homes has been put into action by Bell & Gossett Co. here, manufacturer of hot water heating and air conditioning equipment.

"An outgrowth of a similar earlier program, the new B&G plan not only tells home builders how to use the hydronic heating feature to sell homes, but gives them the materials to do it with—materials not only for selling the home buyer, but for teaching salesmen exactly how to sell the home buyer," the company said.

To help create traffic, B&G is offering builders the following:

1. Newspaper ad copy explaining the hydronic heating feature, plus layouts for ads "with a different twist." Home builders supply these, along with house illustrations, prices, etc., to the newspaper.

2. Publicity releases, written with an interest-catching flair, telling what hydronic heating means in terms of day-to-day living conveniences.

3. Signs — big weather-resistant outdoor signs and smaller indoor signs—to play up the hydronic feature at the home.

4. Display pieces for specific locations around the model house. These are in a series of five, for five specific locations: bedroom, bathroom, living room, kitchen, and basement or utility room. Each sign emphasizes special advantages that hydronic heating provides for that specific room.

5. "The Hydronic Home," a colorfully illustrated 20-page booklet that home salesmen can use to explain to prospective buyers what hydronics means in terms of comfort, health, and convenience.

6. Give-away folders and brochures that abbreviate the same hydronics story. These can be used as part of the home builder's regular descriptive material, as direct mail pieces, or as handouts to model home visitors.

In addition, to help home builders convert interest in hydronic homes into sales, B&G is also providing builders with:

1. The "Hydronic Team" plan —a technique for coordinating the plans of the home builder, heating contractor, heating wholesaler, boiler representative, and B&G representative "to produce the most efficient home heating plants at the lowest possible price and achieve the simplest maintenance arrangement."

2. "Home Merchandising," a brochure to help home salesmen do a more effective selling job by knowing the hydronic system better. This brochure explains the step-by-step sales methods that have been used successfully by home builders.

"A major attraction now being offered in B&G equipment is the 'Hydro-Flo' package, a complete collection of boiler accessories that can be preassembled in a heating contractor's shop in a matter of minutes, then installed in the home in another matter of minutes," it was stated.

SOME of the promotion brochures and materials which Bell & Gossett Co. is providing builders to help their salesmen sell prospective buyers on the advantages of a hydronic home.

ANACONDA pre-formed panel grids (PG'S)

offer quick, easy, cost-saving ways of installing efficient radiant heating systems. Two standard panel grids are available, each containing 50 linear feet of Type L Anaconda Copper Tube . . . ⅜" nominal (½" O.D.) for ceilings . . . ½" nominal (⅝" O.D.) for floors.

Center-to-center spacing of PG's can be adjusted during installation to meet design requirements. Lightweight, easy-to-handle PG's come ready to install. 61-1025

Send coupon for FREE booklet!

Anaconda American Brass Company,
Waterbury 20, Conn.
(In Canada: Anaconda American Brass Ltd.,
New Toronto, Ont.)

Please send me free Booklet C-6 which tells how to design, lay out and install radiant panel heating systems with PG's.

NAME_____

COMPANY_____

STREET_____

CITY_____ ZONE____ STATE_____

ANACONDA®
AMERICAN BRASS COMPANY

Iron Fireman To Expand In Heating, Electronics Fields

CLEVELAND—Iron Fireman Mfg. Co. announced it will expand its operations in the fields of heating equipment and electronics.

President Lewis J. Cox said "this expansion will come about chiefly through acquisitions, and discussions with several companies are going on right now."

Cox added that Iron Fireman also is "looking over a number of other companies with a view to acquisition."

With a plant here and in Toronto, Can., Iron Fireman manufactures gas and oil-fired heating equipment—residential, commercial, and industrial. Two other plants, in Portland, Ore., produce aircraft parts and assemblies and electronic components for aircraft and space vehicles.

The announcement followed the election of Thomas E. Morris as financial vice president and treasurer of the company. Cox said Morris will play a large role with respect to acquisition moves by Iron Fireman.

"In addition," Cox said, "Mr. Morris's election means that Iron Fireman will step up its diversification program and strengthen its ties with the financial community and with stockholders."

Morris formerly was financial vice president and treasurer of Harvest Queen Mill & Elevator Co. and Metallurgical Resources, Inc., both of Dallas.

Robert F. Paling Gets G-E Control Dept. Post

MORRISON, Ill. — Robert F. Paling has been appointed manager of heating control sales at General Electric's Appliance Control Dept. here, according to Stanley A. Gorski, the department's manager of marketing.

In his new position, Paling is responsible for sales of the department's line of controls for domestic warm air, hot water, and steam heating systems, as well as controls for other special purpose applications. He was formerly a sales engineer.

Gas-Fired Heating-Cooling System Avoids Disturbing Office Workers

CLEVELAND — Cooling a commercial building quietly and without vibration—to avoid disturbing office workers adjacent to the equipment room — was accomplished by installing a gas-fired heating-cooling system at the United Appeal Headquarters building here.

When the architectural firm of Weinberg & Teare designed the structure, the most efficient use of space in the two story-and-basement building dictated the equipment room be located along the rear wall of the basement, which also contains offices, according to a report by the American Gas Assn. Office space, therefore, borders on two sides and over the boiler room.

Superior Engineering Co., the consulting mechanical engineer, specified two chiller absorption units to cool the 26,000 sq ft of working area.

One chiller unit alone carries the normal cooling load, and the second is cut in to meet peak demands. The system was designed to provide a 95 to 80° temperature drop during the cooling season, and 0-72° in winter. The heat loss for the United Appeal building is estimated at 975,000 Btu.

The building itself is a modern brick-and-glass curtain-wall structure, with a concrete roof covered by 2-in. rigid insulation, with 4-in. batts above the ceiling. It was designed to permit two additional floors to be constructed at a later date. When the building is expanded, it will be a relatively simple task to air condition the new area with the addition of another chiller.

Opened in the Fall of 1959, the building houses the Red Feather Community Chest headquarters for the Cleveland area.

Steam to operate the chillers, and to supply heat, is provided by two Peerless No. 150-8 cast iron boilers of 1.05 million Btu input each. The chillers are 25-ton Servel (Arkla) units.

An additional environment-control problem was posed by a number of inside offices. Outside offices are supplied ventilation by through-wall intakes at the fan coil units (Trane).

Inside offices are ventilated, however, by fresh air ducts which run through the ceiling and down the walls. Five roof exhaust fans discharge air from inside offices and multi-occupancy rooms, drawing from peripheral rooms through louvered doors and hallways. Temperature is regulated by Johnson pneumatic controls placed in various building zones.

Total cost of the 303,000-cu ft building was $500,000, or 19.23 per sq ft. Many provisions for the addition of two more floors were included in this cost.

The heating and cooling contract of $110,638, including plumbing, was executed by Feldman Bros. of Cleveland.

Midtown Tower Gets 2,500 Tons of Cooling

ROCHESTER, N. Y. — Refrigeration equipment for Midtown Tower has been hoisted into place — on the building's third floor.

Three refrigeration machines will be used to chill water, which in turn will condition the air for the 18-story building. The cooling load will be about 2,500 tons.

The equipment, manufactured by Carrier Corp., is being installed by the Quackenbush Co. of Buffalo, which holds the $1,250,000 heating-air conditioning-ventilating subcontract. The machines will use low-pressure steam supplied by Rochester Gas & Electric Corp. to produce the cooling.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Glass and Concrete Building Will Have High Pressure Dual Duct Air Conditioning

BLOOMINGTON, Ill.—A completely air conditioned glass and concrete building nearing completion here will house the Illinois Agricultural Association and eight affiliated companies.

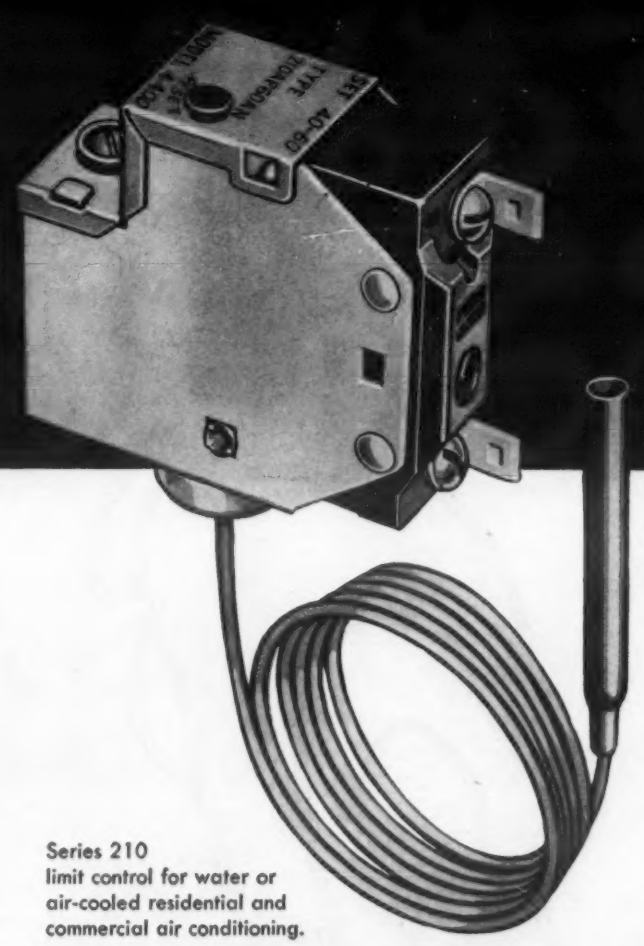
Designed by Graham, Anderson, Probst & White of Chicago, the three-story building has a high pressure dual duct air conditioning system. Air distribution is through a combination light troffer and diffuser.

Thermaflex-A flexible tubing is used to connect the mixing boxes to both the high velocity mains and the combination light troffer-diffuser, it was reported by Flexible Tubing Corp. Thermaflex-A has a three-ply laminated cover permanently bonded to a galvanized spring steel wire helix. The cover is of woven fiber glass sandwiched between thin flexible aluminum sheets.

Mechanical and installing contractor was George S. Walker of Decatur, Ill.

NOW!
NO MORE
WAITING

Servicemen... here's the best news ever!



your wholesaler has limit controls for replacement on all packaged air conditioning

Series 210
limit control for water or air-cooled residential and commercial air conditioning.

Penn universal replacements help you give immediate service

Now . . . Penn's Series 210 limit control, widely-used by manufacturers of packaged residential and commercial air conditioning, *is available for field replacement.* And, with its adjustable pressure range, it will fit the specifications of any air conditioner manufacturer.

No more waiting . . . no more disgruntled customers . . . simply go to your wholesaler and get immediately the correct replacement for the high or low limit control. Your wholesaler has a handy Penn cross-reference chart which makes proper selection fast and easy.

Remember, to give your customers prompt service . . . go to your wholesaler and ask for the Penn Series 210 limit control.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

fires which got out of control also caused 30% of all forest fires, costing Mr. and Mrs. America millions of dollars more.

Worst of all, litterbugging is responsible for more than 75,000 persons being seriously injured annually as a result of cars striking or swerving to avoid objects tossed on roads and highways.

Litter can be dangerous in other ways as well. Refuse on beaches, in lakes, streams, parks, and recreation areas can become a breeding ground for disease-carrying insects and rodents.

Besides polluting the water, litter in a lake or river can puncture the hull of a boat traveling at high speed or damage a rudder or propeller.

Carelessness Can Be Costly

Many states, concerned with the carelessness that is changing the nation's recreational areas into public dumps, have cracked down on litterbugs with strengthened anti-litter laws and ordinances.

Disregarding such laws can prove expensive. In Wyoming, convicted litterbugs face a fine of up to $100 or up to 90 days in jail. In South Dakota, fines ranging from $25 to $100 may be imposed on persons found guilty of depositing litter or debris on highways, public waters, shorelines, public parks, or recreation areas.

If you're caught littering Wisconsin's state fishing waters, be prepared to pay a $100 fine—and lose your fishing license for a year.

And they mean business! Recently, 68% of the arrests made by Pennsylvania's fishing wardens during the first quarter of the year were for violations of a state law that prohibited littering of waterways.

In many places, sportsmen, conservationists, and rural groups have taken the initiative in litter-prevention activities.

In Maryland, sportsmen not only provide extra trash receptacles for "heavy" litter areas, but also service the containers themselves.

Kentucky has undertaken a border-to-border cleanup with widespread governmental and voluntary support. The Future Homemakers and Farm Bureau Federation are among groups cooperating in the official "Make Kentucky A Cleaner, Greener Land" statewide anti-litter effort.

Keep America Beautiful, Inc., the national public service organization for the prevention of litter, says that the litterbug *can* be eliminated if everyone will just watch his outdoor manners. Here's how!

1. Leave that picnic site litter-free and inviting for the next visitors. Deposit all trash in proper receptacles or take it with you. "Police" the area so that neither litter nor the careless arrangement of tables and benches can spoil its beauty.

2. "Summerizing" your home also means removing all piled-up trash and debris left from housecleaning chores. Immediate and proper disposal will help prevent rubbish-caused fires on your property as well.

3. If you're planning a motor trip for your vacation, make it both carefree and litter-free every mile of the way. Carry a litterbag in the car and put travel-trash in it—not out the window.

4. Set a good example for children always by disposing of trash in a proper receptacle—wherever you are.

5. Alert your friends to their personal responsibility for the appearance of both private and public property—city streets, vacant lots, parks, beaches, streams, highways, and all recreation areas.

Taking to the waterways? Good manners are just as important there as on highways. For the seagoing individual, these preventive measures are recommended:

Keep a supply of litterbags aboard your boat *but,* when full, bring them back to port for proper disposal on shore. Don't dump.

Prevent the discharge of oil or gas into waters where it may be carried to shore and kill animal or plant life.

Maintain docks and equipment in good condition so they don't become eyesores.

Every American has a stake in the liveability of his country.

Wherever you are, please dispose of that trash properly, and thus help keep your state, and nation, clean and safe.

Then, have fun!

Church Notes

Pastor of a church in South Haven, Mich., has dreamed up an 11th Commandment.

This is posted on a sign outside the church's main entrance. The sign reads:

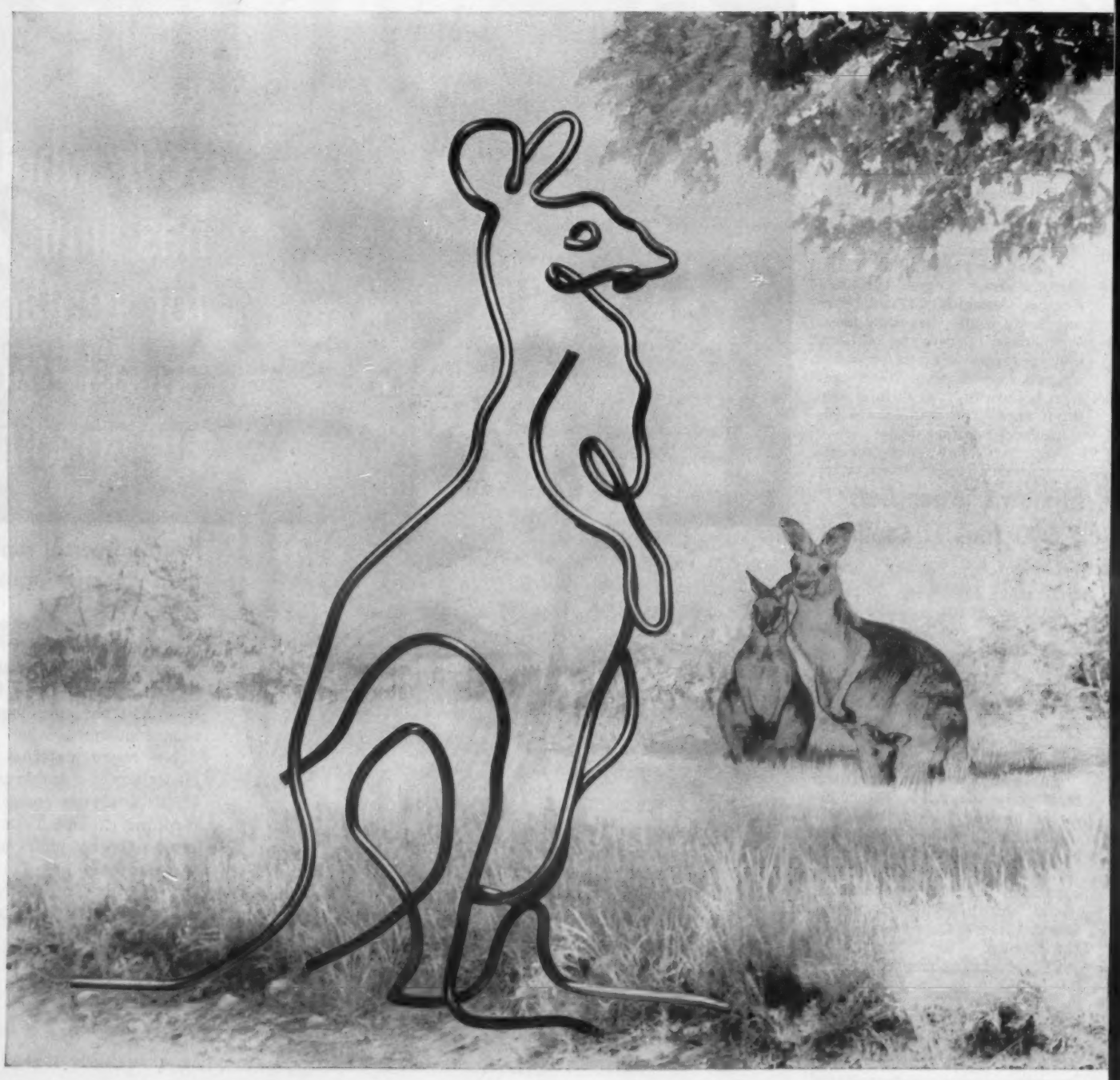
"Thou Shalt Not Park From Here to the Corner."

Incidentally, stuffy air, much more than stuffy sermons, causes people to fall asleep in church, we have a feeling.

But at the present time, of some 260,000 churches in the United States, only 3% are air conditioned.

True talent reappears again despite opposition, because true talent cannot be kept down. Sooner or later it succeeds in reasserting itself, and its star will shine forever on the sky of recognition.—MARI ANNE SZELL KUBELIK.

Bundy can mass-fabricate practically anything



Verse of the Week

'Tis the human touch in this world that counts,
The touch of your hand and mine.
Which means far more to the fainting heart
Than shelter and bread and wine;
For shelter is gone when the night is o'er,
And bread lasts only a day,
But the touch of the hand and the sound of the voice
Sing on in the soul always.

SPENCER M. FREE

Kids Say the Darndest Things

Hot day. Mary was warned about racing through the lawn sprinkler. But she could not resist the cool spray, and did it again. Her mother spanked her.

"Now, now," grandmother tut-tutted. "You can't expect Mary to act like an adult."

"Mama," Mary howled, "why don't you obey your mother?"

Sunburned Sue (age 5) looked at her peeling face and shoulders in a mirror.

"I'm not even in school," she wailed, "and I'm wearing out already."

From Our Mailbag

Laguna Beach, Calif.

Publisher:

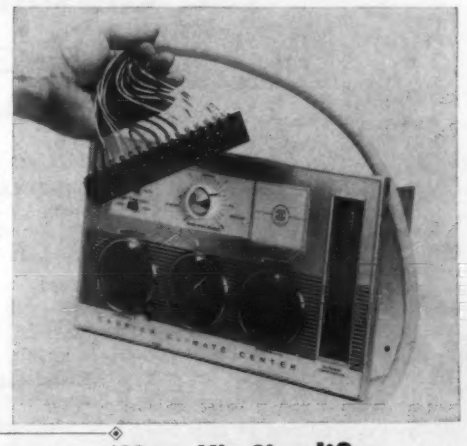
We read your "Dope" column first when we get the NEWS and enjoy it. Also, we take the liberty of doing a little plagiarizing and use some of your corny humor in a column I write for the local Rotary Bulletin, "The Breeze."

Here's a riddle for you—In what type of structure would you figure 100% latent load? Simple answer — An insane asylum — there is no sensible load. Sorry, I lost my head!

The best from a neophyte.

GORDON STRACHAN

Terminal Board Has Marked Wires

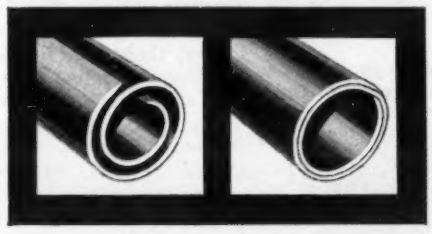


NEW terminal board with 15 clearly marked wires is part of the new installation kit supplied with each Carrier "Climate Center."

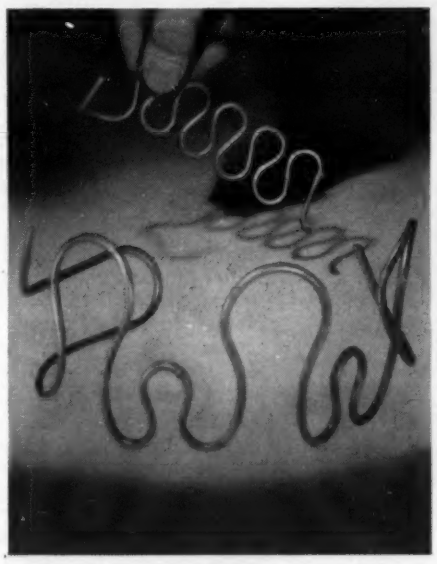
Want top-quality refrigeration tubing at mass-fabrication cost? Bundy can give it to you for virtually every tubing requirement . . . for simple or complex shapes, one bend or many. One big reason is Bundyweld® steel tubing: standard wall thickness and O.D. are held to +.002″ to −.003″, and it meets ASTM 254. Another reason is Bundy's mass-fabrication facilities themselves, tailored by tubing specialists to turn out tubing parts to the closest tolerances . . . at the lowest possible cost compatible with high quality. Talk to Bundy to find out how you can save money on tubing. Call, write, or wire us, today: Bundy Tubing Company, Detroit 14, Michigan.

BUNDY TUBING COMPANY • DETROIT 14, MICH. • WINCHESTER, KY. • HOMETOWN, PA.

World's largest producer of refrigeration tubing. Affiliated plants in Australia, Brazil, England, France, Germany, Italy, Japan.



Bundyweld, double-walled from a single copper-plated steel strip, is metallurgically bonded through 360° of wall contact. It is lightweight and easily fabricated . . . has remarkably high bursting and fatigue strengths. Sizes available up to ⅝″ O.D.



Even complex bends like these shock loops for compressor discharge tubes (by Taylor Products Division of Tecumseh Products Company) are no problem to mass-fabricate to very close tolerances from Bundyweld tubing. Bundyweld easily withstands the high vibration fatigue inherent in all refrigeration compressors.

BUNDYWELD® TUBING

New Kit Simplifies Installation of Carrier 'Climate Center'

SYRACUSE, N. Y. — Carrier Air Conditioning Co. announced that it is now supplying newly-devised, simplified installation kits with its "Climate Center."

The Carrier Climate Center is a control panel for central residential air conditioning systems which regulates indoor temperatures, reports outdoor weather conditions, and flashes a warning in case of equipment failure.

"Each kit includes a 15-ft sheathed, color-coded cable with push-on connectors one one end and a numbered terminal strip on the other," it was explained.

"This strip, which separates and clearly identifies all connecting wires, can be located close to the heating-cooling equipment. Instructions, plus coding, make proper wiring easy for the dealer.

"An accurate, durable, and easily - installed outside thermometer has a 20-ft capillary tube leading from outdoors to the Climate Center. The tube is sheathed in a flexible wire braided sleeve. Brackets for mounting the plaster box to the wall studs eliminate shimming."

The Carrier Climate Center indicates outdoor and indoor temperatures, barometric pressure and indoor relative humidity. It controls heating, cooling, automatic fan operation, and enables temperatures to be set automatically for night use.

Wiring can be arranged so that the panel will flash warning lights if the air-cleaning filter becomes clogged, the pilot light goes out, the oil burner fails to ignite, the compressor fails to work properly, or the condensate drain is plugged.

Wall Chart Simplifies Choice of Insulation

BUFFALO—Designed to simplify the choice of proper insulation to meet the new "R" factor standards, a new wall chart said to be of value as a reference for architects, utility engineers, and heating and air conditioning contractors as well as insulation applicators is available on request from National Gypsum Co., Buffalo 2, N. Y.

The chart also shows the color-coding system which identifies Gold Bond mineral wool insulation thicknesses, and specifies the Gold Bond products which best meet the "R" factor requirements of the new standards, it was stated.

The Consulting Engineer (1)

'His Role Is To Set Ground Rules for Bidding and Integrate Mechanical Design Into Architectural Design'

By Joe Olivieri of
J. B. Olivieri & Associates, Inc., Detroit

Joe Olivieri, of J. B. Olivieri & Associates, Inc., is a highly respected consulting engineer in Detroit and Michigan. Joe has served as expert witness numerous times, is a graduate of the University of Detroit. He gives a lot of thought to business ethics and to the relationship of a professional to his industry and to society. In these articles, he gives his thoughts on the role and function of the consultant.

The Consulting Engineer. Who is he? What is he?

To the Architect he is a necessary evil. To the Contractor, he is an *un*necessary evil, and to the uncomfortable Owner, he is evil.

The consultant's role in the birth of a building is misunderstood by the architect, the owner, the contractor, and even the consultant himself. Let us examine this person called a consulting engineer and analyze his purpose for existence, his problems and solutions to his problems, and to the problems that he causes.

Most consultants think that they exist only to design systems and to supervise their installation. If only consultants could design, this would be true, but today's contractor is either an engineer or has in his employ engineers who are able to design. So we find that consultants are not needed to design systems. Then why are they needed?

They are needed to set the ground rules for intelligent bidding. Without the consultant to direct traffic, we have chaos. We are all familiar with the owner who calls in from 2 to 20 contractors to design and install a mechanical system. Does the owner receive intelligent proposals which can be analyzed? He does not. Each contractor submits a price based on his own design. These designs can vary from mediocre to excellent. In addition, each design will be based on different loads. At this point the owner should be thoroughly confused, the contractors should be tearing out their hair and sharpening their pencils, because the next step is the shopping.

The owner calls in the lowest bidders and gives them each a chance to cut price. To cut prices, the contractor must cut quality.

Prepares Good Bidding Documents

This goes on and on until the owner gets what he deserves.

Contrast this with the present system where the owner retains a *good* consulting engineer to produce a good set of bidding documents that will outline clearly the system required so that the contractor can accurately price the system. The specification should clearly show the quality of equipment desired. I prefer the tight base bid type specification. With these documents each bidder is bidding on the same quantity of equipment and the same quality. At this point, all contractors have the same cost. Differences in price come in now from varying charges for labor, overhead, and profit. The intelligent, efficient contractor will get the job.

Through the use of this method most of our bids have varied by as little as 3%, most often 5%, and very rarely 10%. We consider this a sign of good bidding documents. The owner gets the job he paid for, and the contractor is protected against the blue suede shoe operator. The consultant's first purpose for existence is to establish proper competitive bidding.

Mechanical Engineer Is Architectural Specialist

The consultant has still another role, a most challenging one. He must integrate mechanical design into the architectural design. At a recent gathering of architects and engineers, I was practically lynched by the engineers present because I said that mechanical design is an art and not a science.

What do I mean by this? A good mechanical engineer is not really an engineer, he is an architectural specialist. The engineering part of the mechanical design is practically 2 times 2 equals 4 in its simplicity. The calculations of heat loss, heat gain, pipe sizing, etc., are relatively simple. Most of the engineering has been done by the manufacturers and by the men who created the various tables and charts we use.

I am not saying that a solid engineering background is not required, only that the engineering required for mechanical designs has been reduced to its ultimate in simplicity.

The challenge in mechanical design is not in the engineering, but in the integration of the mechanical design into the building. This is an art. It is as much an art as the design of a building facade.

Please, friend contractor, I am not saying that you are not as good an engineer as I am, only that I am better equipped by my training and background to aid the architect to produce a building. The architect expects the engineer to be a dashing, imaginative, forward-thinking designer whose systems always work. We are expected to be as wild in our design as they are in theirs, but the system must always work.

If we had no architects, we would have stock unimaginative buildings into which we could install stock imaginative mechanical systems. If we are honest with ourselves, I am sure we will admit that we don't want all buildings to look alike.

That Bug-a-Boo Called 'Extras'

The biggest problem that we must try to erase is that bug-a-boo called *extras*. In order to be imaginative and create new systems, we must take chances. When we take a chance we are, of course, not always right and if the system doesn't work it has to be made to work. But under today's system we never charge the owner for this.

We must educate our friends, the architects, to understand that if they want us to be creative, they must warn the owner that there may be some extra costs involved. This is probably as good a time as any to explain this problem of extras to our contractor friends. I am sure I am correct in saying that legally the architects and engineers are agents of the owner, so the owner is responsible for all costs. Contractors are not the only ones who have competition. I can remember when all extras were just passed on to the owner.

The 'No Extras' Promise Spread

A few years back, however, some architect, in order to get the jump on his fellow architects, promised a school board that if he were awarded the job there would be no extras. Unfortunately, this statment spread like the plague and all architects were soon making the same guarantee. They not only made this guarantee in their name, but in the name of the engineers. This means that when an extra comes up on the job, the engineer or the contractor must absorb it.

This has probably led to much of the bitterness which exists between consulting engineers and contractors. The only solution to this is to get these extras where they belong, to the owner. For too long the architects and engineers have been overselling their services to the owners, and promising them trouble-free systems.

Only the Diety can design a trouble-free extra-free system.

Let us assume for the moment that we eliminate these two thorns in the contractor's side (the architects and the engineers) and substitute in their place the package builder. Where would this put the mechanical contractor?

I am afraid he would fall from the purgatory from which he now works into pure hell. He no longer would have anyone to blame. No more could he say, "I installed it the way you drew it; you find out what's wrong." Also, if he thinks he is shopped, now he will find out what shopping really is.

A good consulting engineer will make every effort to protect the mechanical contractor from shopping by taking separate mechanical bids. But if all buildings were built by design constructors, he would be back bidding to the general contractor working under a new name.

I am sure more mechanical contractors have gone broke from bidding to package builders than from bidding to consulting engineers.

Protecting the Owner

Let us not forget the owner. Who would be there to protect his interest? No one. Package building is fine for the large industrial who has his own staff of engineers who are capable of analyzing the bids of the various package builders, but the poor school board, church board, or shopkeeper who has no one, would be an easy victim for the unscrupulous contractor.

There is no question that there is a trend to package building or design construction, whatever you wish to call it. There are distinct advantages to this system as compared to the present system. But in the long run, I believe our present system provides the most protection to the owner and contractor.

(To Be Continued)

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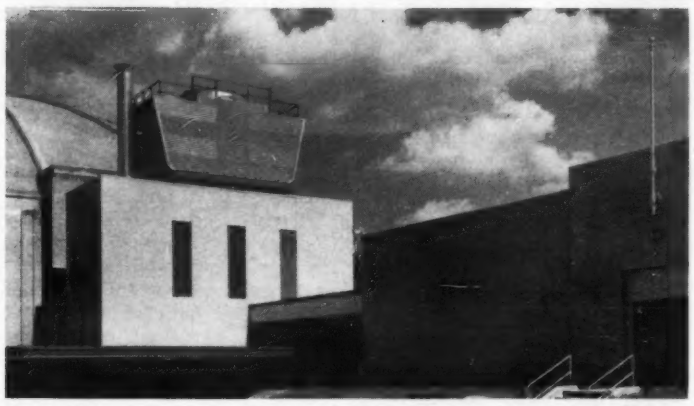
Fort Worth Adds 700-Ton System To Cool Will Rogers Coliseum, Exhibits Building



NEW equipment room was erected for 700-ton compressor, boiler, control center, and cooling tower serving Will Rogers Memorial Coliseum complex in Fort Worth.

* * *

FORT WORTH, Texas—Addition of a 700-ton system to an existing 300-ton setup has provided complete air conditioning for the Will Rogers Memorial Coliseum complex here, including the 4 million cu ft coliseum itself, the 80,000-sq ft exhibits building, and the 3,000-seat auditorium.

The installation was made by Drake Co., Inc., local mechanical contractor, who also remodeled the exhibits building and provided new flooring in the coliseum concourse.

Included in the job was the construction of a new mechanical equipment building to house the compressor, boiler, and Honeywell Supervisory DataCenter to control the complete system. On the roof of the equipment building is a 700-ton cooling tower.

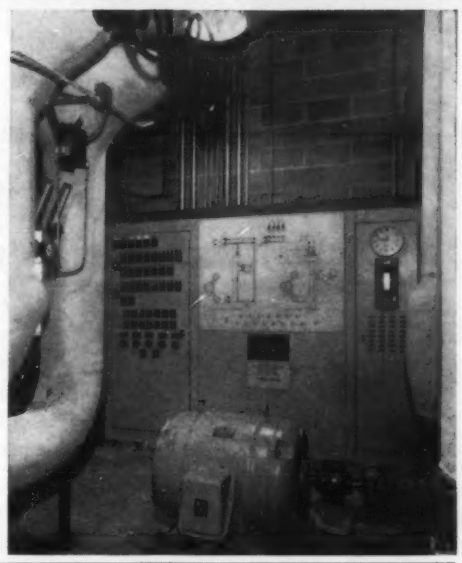
Design of the system permits air conditioning of all three structures in the complex simultaneously, or any one structure, or partial loads in the three.

Previously a 300-ton system had served only the auditorium, points out William Thomas in a feature article in the annual air conditioning issue of *Fort Worth* magazine, a publication of the Chamber of Commerce.

Year-round air conditioning of the coliseum is achieved with 15 ceiling units and more than 100 outlets installed on two levels.

There are 10 units serving the exhibits building, concealed in the skylight area. Complete remodeling of this structure included also the installation of new lighting and folding partitions.

A canopy which connects the new machinery structure with the other three buildings provides overhead passage of piping in addition to serving as a public shelter.



SUPERVISORY DataCenter in equipment building controls year-round 1,000-ton air conditioning system serving the coliseum proper, exhibits building, and auditorium.

Shopping City To Have Air Conditioned Mall

HOUSTON, Tex — Northline Shopping City, a regional-type facility now under construction here, will have one of the largest air conditioned malls in the nation, according to the developer, Theodore W. Berenson.

The center, which will cover 85 acres, will contain 800,000 sq ft of floor space. It is scheduled to open in the fall of 1962. A mall containing about 90,000 sq ft will be air conditioned year-round for the comfort of shoppers in the northeast Houston center.

Houston Hospital Gets 3-Pipe System

HOUSTON, Texas — The Methodist hospital of Houston is adding a 375-bed addition along with accompanying facilities, making it one of the Southwest's largest.

The hospital, located in the famed Texas Medical Center, was designed by Milton McGinty, F.A.I.A. & Associates with the consulting mechanical engineering by the firm of Raymond L Jenkins, P. E.

A York Three-Pipe air conditioning system was chosen by McGinty, Jenkins, and the hospital administrative staff.

Charles G. Heyne & Co. of Houston is the mechanical contractor.

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Editorial

Free Speech, Free Enterprise, And National Defense Endangered by H. R. 7851

IT ISN'T OFTEN that this page gets "het up" by a bill pending in Congress. But H. R. 7851, now being considered by the Hon. Carl Hayden's Senate Appropriations Committee, contains a "sleeper clause" which could do untold damage to our nation.

That "sleeper clause" is section 537 which would deny, to defense contractors, all charges for advertising as a legitimate cost of doing business.

Before going any further into this discussion, let's get one thing straight: the NEWS won't be affected, one way or another. We enter this dispute with clean hands.

Moreover, section 537 of H. R. 7851, is based on an uninformed misconception, to wit:

That those "we manufacture missiles and space ship" advertisements you see in national magazines are tax-deductible. They aren't.

Big corporations which place such image-building prestige advertisements are spending stockholders' money, not the government's.

People who will be hurt by section 537 of H. R. 7851 are little people—defense subcontractors and small businessmen.

If this law is passed, they won't be able to advertise for engineers and specialized types of employes! They'd have to send recruiting teams out into the field—thus adding immensely to the costs of defense contracts.

Moreover, they couldn't inform (through low-cost advertising) major defense contractors that they can make this part or that component.

Such modest advertisements are placed in technical publications. The latter, like all media, depend on advertising to pay the production costs of the vitally useful information they publish.

Many such technical "books" would have to give up the ghost if this legislation is enacted.

For that reason, among many others, Mr. McNamara's Defense Dept. not only did not recommend this provision, but is on record that it does not favor it.

Freedom of speech and the press (dissemination of information) is an undeniable feature of our Constitution. Moreover, free exchange of information on technical discoveries is essential to our military progress.

Our free enterprise system itself—the ideal we are defending—might collapse if America's small entrepreneurs are hamstrung in their efforts to recruit employes, and announce their productive capabilities, by this "sleeper clause."

Are we unduly alarmed over a minor clause in an omnibus bill? Huh-uh, fellow citizen. Big issues are involved. Write your protest to Senator Hayden today!

What's It For? What Does It Do?

Have you seen the *Princess* telephone? It's a lovely thing, compact and stylish. Just looking at it, one can understand the engineering talent that went into getting the innards in so limited a space, the genius needed to incorporate the night light and dial light and the top-mounted handpiece so beautifully.

But, within a few months of the phone's introduction, Bell Telephone received hundreds, some say thousands, of complaints: the Princess won't stay still when you dial it. We understand that a new, heavier base is available to correct this problem, that thought is being given to decreasing the spring tension on the dial.

We wonder, though. In all the months of designing and engineering and prototyping and altering, didn't anyone—ever—*try to make a phone call* with the Princess!

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TANK AND A TIP OF THE HATLO HAT TO JACK L. KAMSLER, P.O. BOX 857, CHICAGO 90, ILL.

AND THE REAL BIG TYCOONS···ALL THEY DO IS MOAN HOW TOUGH THINGS ARE WITH THEM····
I TELL YOU I'M JUST ABOUT BANKRUPT!! I ONLY MADE HALF A MILLION LAST YEAR···
MY BACK IS TO THE WALL···DON'T KNOW WHERE MY NEXT YACHT IS COMING FROM···
5-18
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They'll Do It Every Time

by Jimmy Hatlo

OFF THE CHEST

FINDS JOBS AND KNOWLEDGE IN NEWS

1150 W. Prince Rd. #26
Tucson, Ariz.

Dope:

It's not often that I take time out to write to a newspaper, although I have been a reader of the NEWS since 1935.

I followed you in your column as you wrote of your trip around the world and wished I could be making it. I have worked in North Carolina, Virginia, Tennessee, South Carolina, Georgia, Florida, Texas, back to California, and have been here in Arizona three years.

It's been lots of fun. We have met loads of wonderful people and hope to meet lots more. Am still a serviceman working with the tools. After 26 years we haven't got rich, neither have we gone hungry.

Maybe I could have made more money if I had remained in one spot and opened up a business for myself, but don't think I would have gotten as much enjoyment from it as I have traveling and working in different parts of the country.

I have obtained a couple of nice jobs through Positions Wanted ads in the NEWS.

I enjoy your *Outside Dope* Column very much, too, also the 25 years ago files from the NEWS as I remember reading some of the original articles.

I have benefited from your articles on service and would like to see more. You see I am still learning.

If I ever reach the point where there is nothing for me to learn, then I will be ready to quit, but I don't think that day will come.

Well, if I am still reading your "Dope" Column 25 years hence, maybe I will get around to writing you again. In the meantime will enjoy it whether we write or not.

EVERETT L. EVANS

TO COMBAT COMMUNISM

Van Tighem Sheet Metal Works
Great Falls, Mont.

Editor:

Enclosed please find 20¢ for which please send me the May 29, 1961, AIR CONDITIONING, HEATING & REFRIGERATION NEWS in which there is an article by George F. Taubeneck "Outside Dope" which I enjoy reading so much. Especially this article covered *Communism.*

We have a group here who are working to combat communism and I wanted to show them this article. I loaned it out to an irresponsible person who could not locate my copy after he was through with it, so now I do not have this particular issue, which I would greatly value in having for our group.

JOHN VAN TIGHEM

HOMEWORK

Hastings Air Control, Inc.
Omaha 5, Neb.

Editor:

Your recent editorial headed "How Nations Acquire Capital" is one of the best that I have ever read on the subject of so-called "Foreign Aid."

Many of the points made by you have a great deal of impact. I wish that some of the "do-gooders" in Washington could be forced to read your article word by word at least ten times.

P. WINTROUB

HE LIKES US

Recold Corp.
Los Angeles, Calif.

Editor:

You know, George, I simply cannot believe that this industry of ours could successfully exist without your fine trade paper; which, to say the least, is the "eyes and ears" of the entire air conditioning, heating, and refrigeration industry.

HY JARVIS
President

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From the Files of the News

25 years ago

Highlight of the $250,000-plus worth of air conditioning equipment sold in Oklahoma City in 1936, is a clothing store installation comprised of a 30-ton unit with an elaborate ductwork system having 47 outlets. . . . Completely air conditioned homes are being built this summer by four employes of Commonwealth Edison Co. using designs prepared by Kelvinator Corp. in its nationwide contest to promote residential air conditioning; the compact duct-type systems provide cooling, heating, and conditioning.

Standards for drinking water temperatures which will be adhered to in water cooler installations were adopted by the Commercial Refrigeration Section of NEMA. . . . Installations of air conditioning equipment in Chicago during July totaled 112 jobs, of which 41 installations were made in private offices.

A Carrier evaporative condenser is effecting a 95% saving in water consumption of a Cincinnati restaurant's 30-ton air conditioning system.

In spite of revolution in Spain, tariffs in Australia, monetary and exchange barriers in Germany, quota handicaps in France, and "no trade" with Russia, the editorial comes "not to bury the export business but to praise it . . . it is our belief that foreign markets will take up more and more of the production of American factories, and keep the industry in its present prosperous condition for many years to come . . . the need for refrigeration is great . . . now is the time that refrigeration executives want to study and cultivate that important source of future revenue—the export market!"

The General Electric Air Conditioning Institute learned from 10,000 questionnaires sent to the general public that the public's knowledge of air conditioning is fragmentary, that mose homeowners have not yet considered residential air conditioning, but that most homeowners expect air conditioning as a feature of a new home. Only 9% of those questioned could name all six functions of air conditioning, according to the survey.

10 years ago

The Kansas City water department director disclosed that construction of another pumping station is being considered to meet excessive demands for additional water for air conditioning equipment; the city presently uses about 20,000,000 gals per day in hot weather, and trends indicate the demands could double. Kansas City has 93 tons of refrigeration for each 1,000 population, compared to only 50 tons per 1,000 in such cities as Chicago and Philadelphia. . . . General Electric has a special marketing program for its new ½-ton window mounted room air conditioner, with distribution geared to 16 specific areas.

The Pocono Playhouse in Mountain Home, Pa. has air conditioning this summer because four years ago the heating installation was designed to accommodate cooling; the "easy-as-pie" installation incorporates Trane equipment, Minneapolis-Honeywell controls, and Tuttle & Bailey ceiling-type diffusers.

Four Carrier refrigerating compressors will help air condition the new United States embassy in Havana, Cuba.

Heating, ventilating, and air conditioning engineers concerned with evaluating the effects of "many-shaped" humans on energy received from heated or cooled wall, floor, and ceiling areas, have been told by two professors of mechanical engineering that the "human shape factor" is practically the same for all shapes, average or non-average. And 95% of population varies only 7%, plus or minus, from average figure, their study shows.

Commercial Refrigerator Manufacturers Assn., in its annual meeting, expressed concern over a slackening of business resulting from restrictions imposed by National Production Administration's order M-4, but "old hands" advised against "getting panicky." . . . Robert L. Tyler was re-elected president of the group.

Dunham-Bush Display In Garden Court

AT LOS ANGELES product indoctrination meeting, open air garden court display of Dunham-Bush products included (l to r) "PAC" Packaged Air Conditioner, "RMC" Roof Mounted Air Conditioner, "CRCU" Large Remote Condensing Unit, and "HAH" Horizontal Air Handling Unit. John Roth, marketing manager of Dunham-Bush, conducted product indoctrination session during recent extended tour of western and southwestern states. In the course of the traveling symposium, over 7,000 contractors, architects, and consulting engineers were acquainted with new Dunham-Bush products, particularly Multi-Drive compressors, Brunner-Metics, packaged air conditioners, water savers, and heating products.

Paul Roop Purchases Toledo Refrigeration

TOLEDO — Paul Roop, formerly vice president of the Toledo Refrigeration division of Harms Industries, has purchased the division and will operate it as Toledo Refrigeration, Inc., at the present address.

Roop is president of the company.

The organization specializes in commercial and industrial refrigeration.

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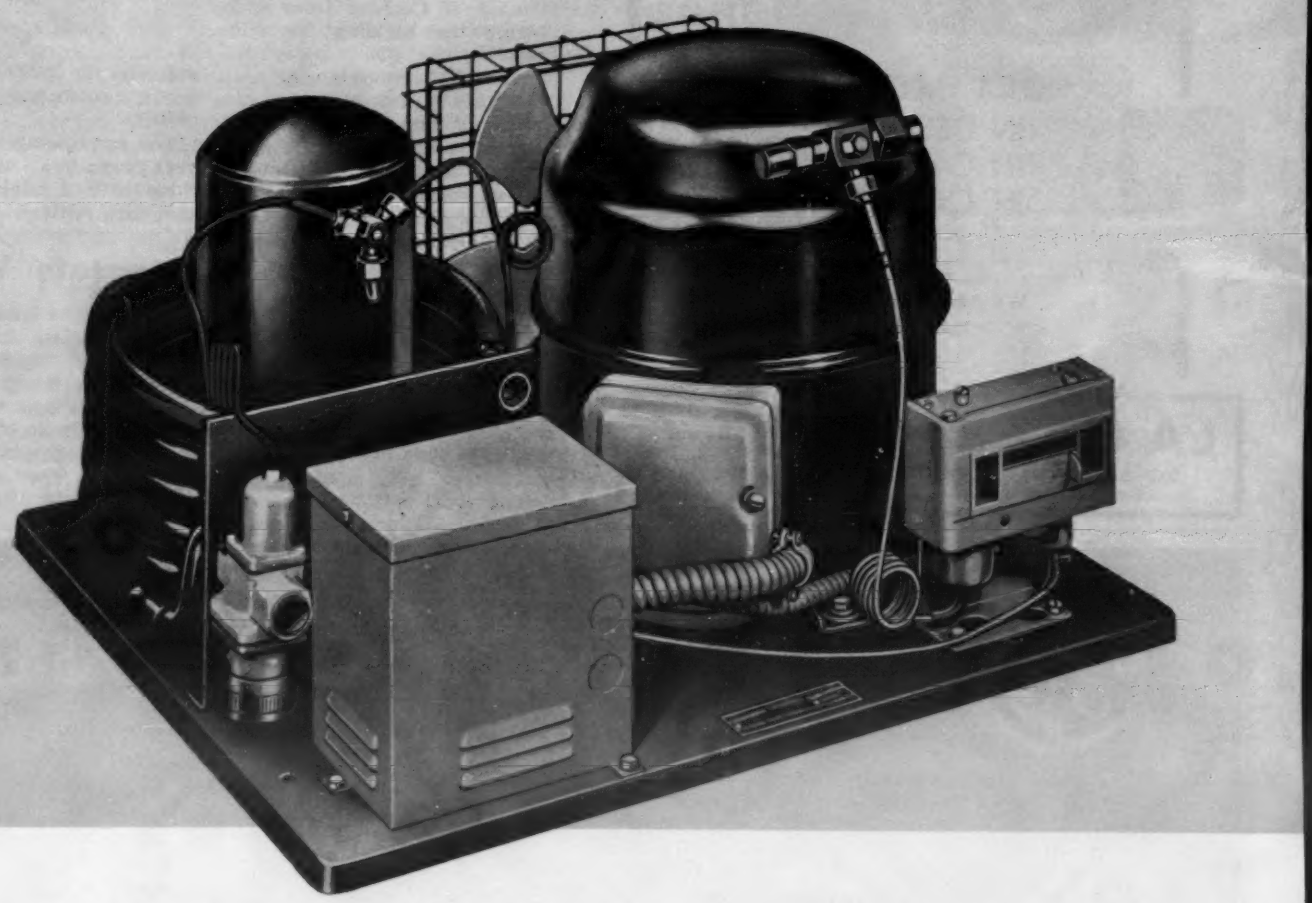

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So that it will meet the performance standards of Tecumseh and other American manufacturers, Capilator is always plug-drawn to insure smooth, mirror-bright inside diameters. Its ends are chamfered for unimpeded flow and, for maximum cleanliness, each length is washed in solvent, purged with "dry" air and has the ends paper wrapped. Capilator's manufacturing tolerances are rigidly controlled to meet customer's stated flow requirements.

If your company uses seamless copper, copper alloy or aluminum tube why not follow the lead set by Tecumseh and other leading American companies—specify Wolverine. Write, too, for your free copy of the Wolverine Tubemanship Booklet.

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Customer Can Select Chilled Wine Right Off Shelf at Liquor Store

TUSTIN, Calif. — Wine sales at the Hillview Liquor Store here have increased substantially since owner William Galusha has made it possible for customers to pick dinner wines off the shelf, already chilled to the proper temperature for serving.

Like many package store owners, Galusha formerly displayed chilled wines in a reach-in refrigerator.

When he created a separate "Wine Cellar," however, a 9 by 7-ft room separated from the remainder of the store by a wrought-iron grille, and given an unusual architectural treatment with brick walls, Galusha capitalized on the fact that the Wine Cellar backed up on the store's walk-in beer cooler.

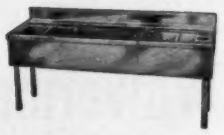
To provide a "blanket of air effect" Galusha simply drilled small holes through the shelves on which some 280 bottles of wine are shown, through the reach-in refrigerator wall, and wound up with a constantly circulating blanket of air which maintains the proper temperature on the shelving.

Wine shelves are set back 6 in. from the stainless steel enclosure in which they are set, to provide space for cold air, taken at the top of the display shelving to flow down over five levels of shelving, returning into the walk-in refrigerator at the bottom, through slightly larger holes.

FLAKE KING

REACH-IN

SPECIFY LA CROSSE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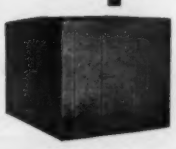
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7 Outdoor Condensing Systems Replace 30 In Large Supermarket Modernization

TRENTON, N. J.—Details of a new equipment modernization program by a large supermarket have been reported by Kramer Trenton Co., manufacturer of refrigeration and air conditioning equipment.

Seven Kramer "Winterstated" outdoor condensing systems have taken over the work formerly done by 30 separate refrigeration condensing systems in Uncle Dick's Family Market, Bargaintown, N. J., owned by Richard Collins.

"The old units, ranging from ½ to 3 hp and operating with water, air, and combination condensing, multiplied as the market grew and more cases were added for display of meats, vegetables, and dairy products," it was pointed out.

"Many nooks and corners were partitioned off to make equipment rooms, and where air-cooled condensing was used, these rooms became so warm that they presented a major problem. In 1959 over $4,000 was spent on maintenance of this equipment.

"The modern Kramer outdoor installation by Bon Wil Refrigeration of Camden frees space within the building for other uses.

"Two 7½-hp condensing units serve 114 ft of open display case with sufficient surplus capacity for an additional 26 ft when needed. A similar unit coupled to an existing "Thermobank" and Kramer evaporator handles the three-room meat box.

"The 44-ft frozen food display case and storage room utilize a 10-hp low temperature unit with Thermobank re-evaporate hot gas defrost for the storage room. A second low temperature unit takes care of the —5° to —10° freezer in its separate building.

"Dairy and smoked meat cases share a 5-hp condensing unit and the 3,200 cu ft outside produce room has its own 3-hp unit.

The condensing units operate year-round in all weather conditions with a minimum of service and without seasonal adjustment, Kramer Trenton said. Polished heavy gauge aluminum housings and internal supports hot dip galvanized after fabrication, prevent corrosion problems and completely protect the equipment, it was stated.

ABOVE: Kramer "Winterstat" outdoor compressors installed on the roof of Uncle Dick's Family Market as part of modernization program.

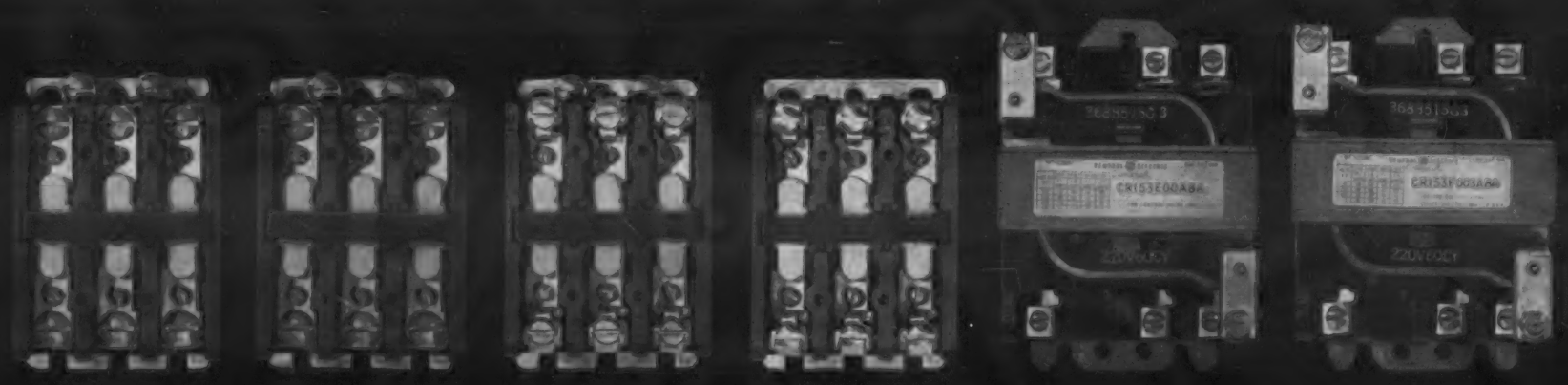
RIGHT: Close-up of aluminum hoods that protect outdoor equipment at Uncle Dick's.

Interstate Vending Names Alan King

CHICAGO — Alan King has been appointed director of research and development for Interstate Vending Co., succeeding Leslie Arnett who has been named chairman of Square Mfg. Co., Interstate's manufacturing subsidiary. The announcement was made by Ronald Wolff, Interstate president.

King is also president of Fresh-O-Matic Foods, Ltd., Montreal, Canada, one of the leading Canadian vending operating companies, it was noted. Arnett will serve as research consultant in addition to his duties as Square Mfg. chairman.

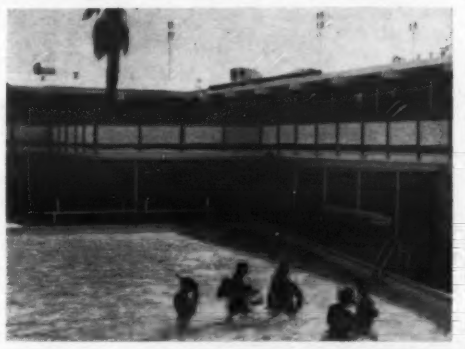
GE NEW 20-, 25-, and 75-amp Ratings Mean



NEW 20 Amp NEW 25 Amp 30 Amp 40 Amp 50 Amp 60 Amp

Apartment Owner Selects Individual Units For Comfort, Convenience, Economy, Looks

FRESNO, Calif. — Central Californians are among the most heat-conscious people in the country, and this concern was paramount with the Torcaso brothers, William and Chester, who have steered completion of the Mark IV Apartments, a unique 9-unit structure off busy U. S. Highway 41 in Fresno. Motorists moving along the 4-lane north-south highway, a gateway road to Yosemite National Park, catch glimpses of the wood frame and stucco Mark IV.



RENTERS of Mark IV Apartments enjoy Olympic size swimming pool. Nine American-Standard 2-ton units are on the roof.

Exterior attractiveness was important to the Torcasos, but internal comfort, they declare, was their primary consideration. Their final selection of air conditioners came after countless conversations with technicians and numerous checks on bases of comfort, convenience, economy, and looks.

The Torcaso contract went to American Standard, whose sales clincher was "the value inherent in an individual air conditioning unit for each apartment"—put forth by Robert L. Simmons, California representative of American Standard's Air Conditioning Div. The contractor was Ideal Air of Fresno.

The builders chose 2-hp self-contained units model (ACP 21) with design temperature at 105°. The blower develops 720 cfm against ¼-in. static pressure. The unit's total Btuh capacity is 22,000 under ARI standards.

Technical, Practical Aspects Considered

The decision was based on a combination of technical and practical considerations. A central system, advised James McGrath, co-owner of Ideal Air, the installing firm, is often too expensive an installation for the average apartment house. The individual 2-ton package units purchased for the Mark IV, he indicated, necessitate no piping and saved the buyers a total of about $2,700.

Window units and thru-wall air conditioning units were both regarded as ineffective for the two and one-bedroom apartments because each concentrated air circulation in a limited portion of the apartment. McGrath also added that neither one of these units filter or circulate air as well as the individual roof units selected by the Torcasos.

Units Designed for Commerical Installation

"The self-contained units in the Mark IV apartments are actually designed for commercial installation and are equipped to handle the air needed for a duct distribution system," McGrath explained. A further advantage, he added, is practically trouble-free maintenance. Only periodic cleaning of filters is required.

The duct air distribution system was an impressive factor to the Torcasos. "The comfort generated throughout an apartment by this method helps to lessen a turnover of renters," says William Torcaso. Tennants like uniform comfort throughout the apartment and not a concentration of cool air in one room.

"It's important to be cool," he quipped, "when you're shaving as well as when you're entertaining guests in the living room."

"Renters don't like noise, either," he intimated. Torcaso was alluding to the quiet centrifugal evaporator blowers, soundproof insulated cabinets, vibration-free compressors in the individual units.

Renters Pay Utilities

Cost of the air conditioning is distributed equitably through the apartment house, with each renter paying his own utility bill.

Decor was also a prime consideration when the Torcasos decided on type of air conditioner. Room and window units, comments William, tended to clash with the calm dignity of the interior decoration. The modernistic Danish decor of the living rooms, the ash-wood raised panels of the kitchen, the exposed beams along the ceilings in the compact apartments made the ducted roof unit imperative, according to the owners.

The Mark IV Apartments, situated on a 1½-acre plot on the northern fringes of Fresno, are second floor units overlooking a 100 by 75-ft "Wonderland Swim Pool," which is operated by the Torcaso brothers. Wrought iron gates, opened by a pushbutton mechanism in each apartment, bring dweller and visitor to stairways leading to a comfortable sun deck which sweeps around the nine units. Renters and their guests have access to the pool, which is closed to the public about 6:30 each evening.

Kaleidoscope View Of Swimmers

Renters enjoy the kaleidoscopic view of swimmers from the privacy of their sun deck over which they hover several California palms; then have the big pool to themselves during the evenings. When they tire of relaxing outside, say the Torcasos, they can return to the privacy of their double-walled, insulated apartments, each with uniform cooling temperatures in all rooms.

"WITH OUR DUCTED air conditioning system the kitchen is just as comfortable as the living room," says William Torcaso, co-owner of the Mark IV Apartments, "renters like the fact that you can enjoy every room in equal comfort."

with S-K ASSURED PREVENTIVE MAINTENANCE

Where scale, corrosion, algae and slime are day-to-day problems . . . with Stiles-Karlsonite products for *assured preventive maintenance* . . . you'll increase the overall efficiency of all your equipment . . . reducing operating costs.

Through Karlsonite—a low cost efficient water conditioner—elements in water that prove harmful and damaging to equipment are suspended and inactivated. You get crystal clear . . . non-corrosive . . . non-clogging . . . non-precipitating water . . . *always* at lowest cost!

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STILES-KARLSONITE CORPORATION
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GENERAL ELECTRIC NOW OFFERS SEVEN DIFFERENT SIZES OF CONTACTORS AND STARTERS...RATED TO 600 VOLTS

For Air Conditioning and Refrigeration. General Electric's new 20-, 25-, and 75-amp contactors and starters combine with present 30-, 40-, 50-, and 60-amp units to bring you a complete line of economical controls for incorporation into all your residential, commercial, and industrial air conditioning and refrigeration equipment.

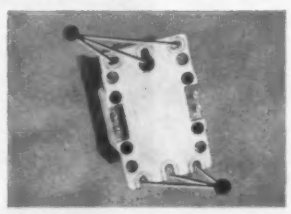
For Resistance Heating. These same General Electric controls have special current ratings for resistance heating loads—each will carry its maximum amp rating at all voltages, allowing you greater performance from the contactors and starters.

And with all seven ratings, you get a complete line of easy-to-install, compact controls with lower power requirements . . . yet fully rated up to 600 volts. Straight-through wiring is standard on all ratings.

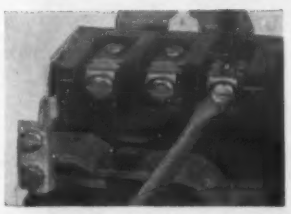
For the complete story on this full line of air conditioning, refrigeration, and heating controls, contact your local G-E sales engineer today. Or write to Section 811-27, General Electric Co., Schenectady, New York for publication GEA-7316A.

Progress Is Our Most Important Product

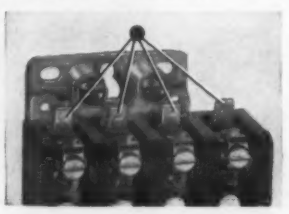
GENERAL ELECTRIC



Durable Cast Aluminum Baseplate on 20- through 40-amp ratings has keyhole slot and two holes at top and three slots at bottom to provide interchangeable mounting.



Pressure-type Terminals on 30-through 75-amp sizes speed hook-up of line and load terminals; screw-type on 20- and 25-amp ratings accept spade and ring terminals or bare wire.



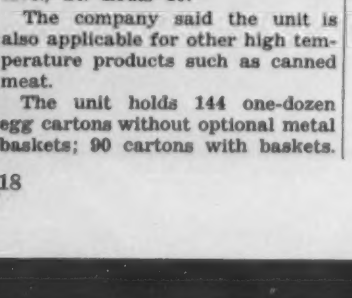
Accessory Connections. Optional quick-connect single- and double-blade terminals on 30- and 40-amp designs permit accessory connections such as condenser fan motors, control transformers, and coils.

Mobile Air Cleaner Has Charcoal Filter

● A completely mobile, compact electronic air cleaner, with a built-in activated charcoal filter panel for odor removal, has been introduced by Trion, Inc., Dept. AHRN, McKees Rocks, Pa.

Enclosed in steel, baked enamel cabinet 32 in. long, 19½ in. high, and 18½ in. deep, the model MAC is designed for use in restaurants, cocktail lounges, hotel and motel meeting rooms, offices, or for any application where localized clean, odor-free air is desirable, the company said.

"Installation of the model MAC is simple—just plug the power cord into the nearest 115-volt a-c outlet, adjust the fan switch for adequate air movement, and position the adjustable louvers to the desired direction of air flow," it was explained.



Taco Adds 14 Sizes To 1700 Series Pumps

● The Taco general purpose pump line, now designated the 1700 Series, formerly the 170 Series, has been expanded to include 20 sizes with motors ranging from ¼ to 7½ hp, according to Taco Heaters, Inc., Dept. AH&RN, 1160 Cranston St., Cranston 9, R. I.

"The addition of 14 new sizes enables the pump to be tailored exactly to the job, with greater efficiency and economy resulting in the installation," the company said. "The 1700 series is compact, lightweight, economical, and easy to service."

They are suitable for cooling towers and other general purpose pumping applications.

Egg Merchandiser Holds 144 Dozens

● A self-contained, portable self-service egg merchandiser, model EM124T, is being marketed by Master-Bilt Refrigeration Mfg. Co., Dept. AH&RN, 4209 Folsom Ave., St. Louis 10.

The company said the unit is also applicable for other high temperature products such as canned meat.

The unit holds 144 one-dozen egg cartons without optional metal baskets; 90 cartons with baskets.

Terminal Seals Screw over Existing Posts

● The availability of its low-cost "Delrin" terminal seals for sealed units, Part No. T-301, has been announced by Watsco, Inc., Dept. AH&RN, 1020 East 15th St., Hialeah, Fla.

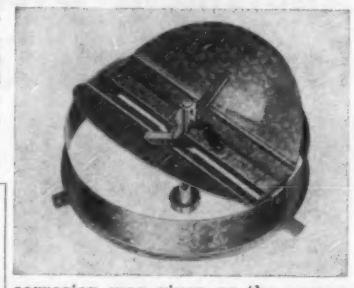
"These terminals are designed to stop terminal leaks instantly without opening the compressor," the company stated. "They can be installed right on the job in just a few minutes, by simply screwing the seals over the existing terminal post.

"Made of du Pont's new plastic 'Delrin,' the T-301 is lower in cost, cannot crack or short out, and is attractively packaged in a re-useable hinged plastic box. It is designed to fit all Tecumseh and most other make units," according to the announcement.

Dampers, Rings Made of Galvanized Steel

● Air Control Products, Inc., Dept. AH&RN, Coopersville, Mich., has announced a changeover from cold-rolled to galvanized steel in the construction of its line of ceiling diffuser dampers and installation rings.

Improved resistance to rust and corrosion was given as the reason for the change. Despite the higher cost of galvanized steel, prices will remain unchanged, according to the company.



"The absence of paint around the operator mechanism insures a smooth opening and closing action," it was pointed out. "Air Control dampers are operated by a screw-type nylon rack and pinion mechanism. Backlash tolerances in the mechanism are close to zero in order to prevent blade flutter under high velocities."

Tool Boxes Mount on Any Pickup Truck

● New Reading "Tool-Mate" tool boxes, easily mounted on any pickup truck, permit users to combine delivery and maintenance functions in a single vehicle, according to Reading Body Works, Dept. AH&RN, Reading, Pa.

Large compartments, equipped with removable shelves and adjustable dividers, carry replacement parts and tools neatly and compactly behind locked weatherproof doors, the company said. Rear bed of pickup remains free to handle refrigerators or other items, in delivery.

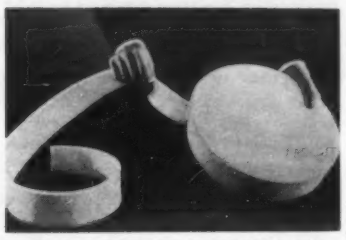
Tool-Mates are constructed of die-formed 16-gauge steel panels, welded into an integral unit. They are available in four lengths from 78 to 108 in.

Mr. Jeff Gilham, Mechanical contractor for Central National Bank, Richmond, Virginia, says:

"Honeywell gave this electric expert service

Mr. Jeff Gilham, at left, in the main area of the Chamberlayne Avenue Branch, Central National Bank. With Mr. Gilham is R. Branson Hobbs, Assistant Cashier and Manager of the branch.

Cipfoam Tape Strips Available In Rolls



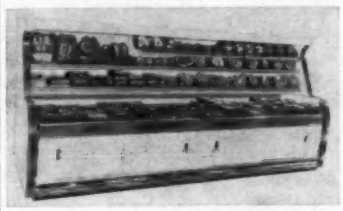
● The Carolina Industrial Plastics Div. of the Essex Wire Corp., Dept. AH&RN, Mount Airy, N. C., announced the development of continuous strips of premium quality polyurethane foam, called "Cipfoam Tape," which is now available in self-contained rolls.

A gentle pull separates the exact length of foam strip required for every application while the remainder stays compactly on the roll without unravelling, the company said.

This new foam "package" is said to provide application advantages for the plumbing-heating industry, it was pointed out.

"Produced in a complete range of foam densities and compressions ratios, these rolls retain all the established polyurethane foam advantage and are available in thicknesses down to a "see through" ⅛ in. and in widths from ¼ to 24 in.," it was stated.

Hill Adds Three-Shelf Meat Merchandiser



● One of the latest additions to the Hill line of multi-tier, "Vertical Displays" is a three-shelf meat merchandiser, according to C. V. Hill Co., Inc., Dept. AH&RN, Trenton, N. J.

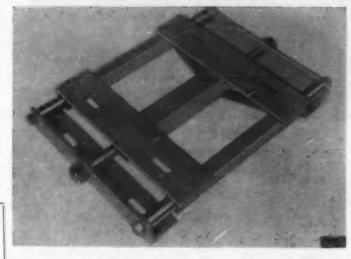
Identified as the model 810-F, this new unit provides increased display above the regular deck of demand items. Cold cuts, picnic and party snacks, ham slices, canned or wrapped hams, and other high profit specialties are displayed, all within easy reach, right at eye level, the company said.

Under the full, 30-in. main deck, refrigerated storage is provided. The multi-tier 810-F is available in 8 and 12-ft lengths. It lines up end to end and also matches with Hill single and double-deck models.

Motor Base Controls Tension on Belts

● Three new series of all-welded tension-controlling motor bases with freely movable carriages have been introduced by Manheim Mfg. & Belting Co., Dept. AH&RN, Manheim, Pa.

These motor bases, to be known as "Manheim Automatic," are said to eliminate excessive wear on



belts and bearings by always providing, automatically, the proper amount of belt tension that is required even under heavy starting loads.

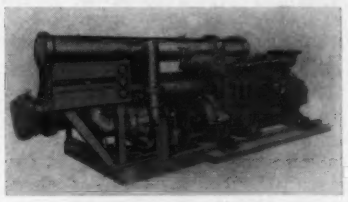
Series "100" motor base is available in standard and vertical types for 19 NEMA frame sizes from 56 through 326-U. Series "200" is designed for use with spring-loaded, variable-pitch pulleys and is available in the same NEMA frame sizes as the "100" series. The "B" series accommodates larger motors, according to the manufacturer.

Flexible Air Duct Made In 14-In. ID

● A 14-in. ID flexible air duct for air conditioning use has been introduced by The Wiremold Co., Dept. AH&RN, Hartford 10, Conn.

Made in 10-ft lengths, the new diameter duct is available in three types: Type 57, for general air conditioning use; Type 52, for use in New York City; and Type 5J, to meet Chicago requirements.

Wiremold air duct is used as a connector or branch duct on the supply side of central air conditioning systems.



Gas-Driven Packaged Water Chillers Bow

● A new line of "Turbomaster" centrifugal water chilling systems, powered by natural gas engines, has been announced by York Corp., subsidiary of Borg-Warner, Dept. AH&RN, York, Pa.

These Series T gas-driven packaged Turbomasters are available completely assembled at the factory, including mounting of the engine.

Presently, the company has 29 models with capacities ranging from 90 to 600 tons. This new system features York's exclusive automatic pre-rotation vane control. This control, along with variations in engine speed, offer the user an almost infinite capacity control.

York engineers have designed a safety control system, including a special safety device to prevent engine-overload which insures the ultimate protection against system breakdown. The Turbomaster also features an auxiliary oil pump, that permits the engine to idle when "warming-up," thus saving wear and tear on the system.

The York Certified Maintenance Program will be available with all installations of these natural-gas engine driven systems. This program features preventive maintenance and periodic inspection by company-trained men.

temperature control job and attention."

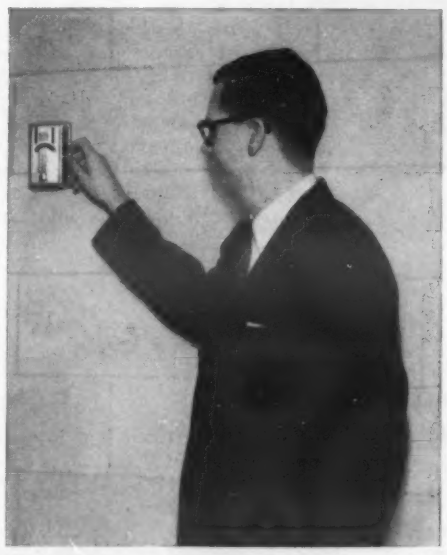
ARCHITECT: *Merrill C. Lee, Richmond*
CONSULTING ENGINEERS: *Hankins & Anderson, Richmond*
MECHANICAL CONTRACTOR: *Horace S. Flournoy, Richmond*

This air conditioning system has Honeywell programmed controls which maintain desired temperatures that conform to the bank's working schedule.

"In a climate like Richmond's, there's no doubt about the need for air conditioning," said Mr. Gilham. "But by the same token we have many mild months through the fall and winter when our weather is cooler. The engineers considered all these factors and specified Honeywell for a smooth-working control set-up. This balanced Honeywell control system gives year 'round comfort plus mild weather economy."

The air conditioning system in the bank is one that employs interlocking Honeywell controls. These controls are preset to maintain a temperature level that matches the working hours of the bank. Employees and customers both enjoy this pre-planned comfort.

You get more to work with when you work with Honeywell. Easily installed controls, accurate specifications, prompt delivery and excellent supervision are the advantages enjoyed by every contractor with Honeywell on his team. And, only Honeywell makes all three types of control systems—pneumatic, electric and electronic. There are 112 conveniently located Honeywell offices across the nation. Call your local one for details. Or, write Honeywell, Dept. AN-8-157, Minneapolis 8, Minnesota.



Mr. Hobbs inspects one of the Honeywell thermostats used throughout the bank. Only Honeywell makes all three types of control systems—pneumatic, electric and electronic.

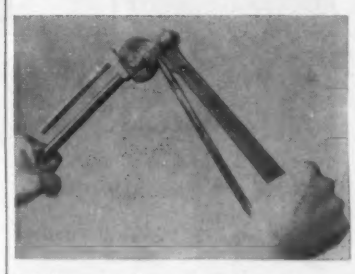
Honeywell

First in Control

SINCE 1885

HONEYWELL INTERNATIONAL
Sales and service offices in all principal cities of the world. Manufacturing in the United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

Ridge Tube Benders Made In Six Sizes



● Six sizes of tubing benders recommended for use with soft or hard copper, aluminum, and certain sizes of stainless steel tubing, as well as brass tubing, are announced by The Ridge Tool Co., Dept. AH&RN, Elyria, Ohio.

The six benders (model numbers 293 through 298) will accommodate tubing of 3/16, ¼, 5/16, ⅜, 7/16, and ½ in. o.d., respectively. Forming shoes and rolls for each size are manufactured of high-grade steel to prevent marring and deformation during bending operations, the company said.

The announcement said the benders are specially designed for easy application and removal when working with tubing which is already installed or where access is difficult.

TECH CENTER

by
FRANK J. VERSAGI

$300,000 House Is Cold In Winter

I recently had occasion to visit an experimental house which cost $300,000 to build, which is being offered for sale at $50,000, and which has found no buyers—including an engineer who lived in the house through one winter.

The house is beautiful, split level and all that; modern decor and furnishings; three full bedrooms, three bathrooms, a large living room, a playroom, good-sized kitchen and eating area. The house is like others being built by several companies around the country who are experimenting with new designs and new structural materials.

This heating system is a 150,000 Btu gas-fired forced air upflow furnace with a duct diverter and damper actuator splitting the air flow to the second floor plenum and the under-slab plenum by means of two-zone control with a thermostat on both floors.

Its cooling system is a 5-ton unit with the evaporator mounted over the discharge opening of the forced air heating unit. Compressor is mounted on a pad at the rear of the house. A 6-in. diameter "Transite" duct chase encases the liquid and suction lines from the heating room to the compressor outside. Condensate overflow is discharged into a French drain below the slab.

The heating-cooling system was designed by the architect, although the sponsoring company's original heating plan involved a two-furnace system, a counterflow furnace for the first floor delivering 1,600 cfm and 125,000 Btu, an upflow furnace for the second floor delivering 1,000 cfm and 85,000 Btu.

There were several reasons why the engineer, who resided with his family in this house for a year, chose not to purchase the house. One important reason was that it was impossible to maintain comfortable conditions during very cold weather.

How could an inadequate heating system be obtained in a house which cost $300,000 to build? Actually, the case history reads very much like a too-typical poor installation in tract housing.

First, the original two-furnace design was discarded because it became obvious the architect had not allowed sufficient room for two furnaces. So the 150,000 Btu furnace, a water heater, and all the attendant piping and ductwork were squeezed into a tiny closet area approximately in the center of the house. (Under-slab radial perimeter heating was used.)

In what was apparently an afterthought, a special duct to bring in combustion air runs down right in front of the hot water heater, making it impossible to read the instructions on how to light the unit and making it almost impossible to reach any of the valves and fittings which must be handled whenever any service is required.

It is not clear just when it was decided to add air conditioning. However, it became obvious that there was inadequate room for a 5-ton coil above this single furnace. But it was mounted.

As a result, the resident engineer stated, it was impossible to heat portions of the house in cold weather. As he explained it, the large coil was so close-coupled in the plenum that turbulance was set up making it impossible to direct air equally to both zones of the house.

The installing contractor has redone the ductwork and made a few changes which he hopes will correct the situation, but we won't know until next winter.

It would be unfair to lay all of the blame for inadequate heating on the heating system. Adding to the problem is the large glass area, single glazed, because the architect insisted, "Most houses do not use double glazing." There are two or three large sliding glass doors which in winter distorted so much as to allow wind and snow to blow into the house.

On the positive side, the resident engineer mentioned that perimeter heating seemed to add a degree of comfort in the form of radiant heat, "as the most important comfort service is the floor system. If your feet are warm, your body will be warm, so we are told," he said.

The shortest run of pipe from the plenum to the perimeter duct is through the kitchen. The engineer notes that this section is noticably warm when walking over it in stocking feet, but not uncomfortably warm.

The NEWS will attempt to obtain any records which may be kept of the heating system's performance during the coming winter.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

SMART PLANNING!

HAVENS COOLING TOWERS

HAVENS COOLING TOWERS are performance proven for air conditioning, refrigeration and industrial processes. Havens feature packaged towers and multiples from 5 thru 600 tons . . . the complete line of Quality Cooling Towers.

Representatives in all major cities and foreign countries

Havens COOLING TOWERS

DIVISION OF HAVENS STRUCTURAL STEEL COMPANY
1713 CRYSTAL AVENUE, KANSAS CITY 26, MISSOURI

Current Literature

Burners, Boilers

BUFFALO — Roberts-Gordon Appliance Corp., 44 Central Ave., Buffalo 6, N. Y., has published a new Commercial-Industrial Manual.

It is a loose-leaf, plastic-coated binder, which includes specifications, list prices, and installation and servicing data on the company's latest commercial-industrial gas and dual-fuel conversion burners, residential and commercial gas and oil cast iron boilers, and gas propeller and blower type unit heaters. The manual is available without charge.

Hydronics Guide

NEW YORK CITY — A new consumer guide to hydronic heating and cooling is available in the form of a pocket-size booklet published by the national Better Heating-Cooling Council.

Designed as a selling tool for contractors, wholesalers, and manufacturers, the 32-page, two-color booklet provides basic information for consumers on all aspects of hydronics. It takes an institutional approach in its presentation and eliminates all reference to brand names.

The booklet is a completely revised and up-dated version of BHC's original consumer information booklet, "Heart of the House." The original title is retained, but the format, copy, and art have been changed.

The new booklet is available at 7 cents a copy, or as low as 5½ cents a copy in quantities of 1,000 or more. Free sample copies may be obtained by writing to Better Heating-Cooling Council, 250 Park Ave., New York 17, N. Y.

Maintenance Catalog

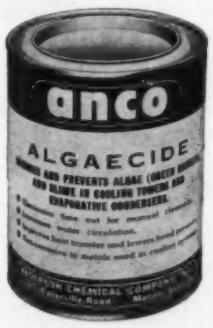
VALLEY STREAM, N. Y.— A catalog compiled for maintenance organizations will be distributed through the 50 Sid Harvey stores to their 20,000 customers shortly after Aug. 15, the company announced.

The catalog consists of 288 illustrated pages of new and Sid Harvey rebuilt replacement parts for oil, gas, and electric heating, 84 of which are devoted exclusively to gas (natural and LPG) such as diaphragm and magnetic valves, thermocouple leads, safety pilots, thermostats, oven controls, etc., as well as gas service packages and accessories. Included also are circulators, low water cut-offs, water feeders, brushes, vacuum cleaners, tools, and instruments.

Those not on Sid Harvey's customer list, the company said, can obtain a copy at any Sid Harvey store after proper identification, or by writing on business letterhead, to Sid Harvey, Inc., 100 East Mineola Ave., Valley Stream, N. Y.

ELIMINATE
algae, fungi, slime
with anco
DRY ALGAECIDE

Kill green growth and slime in cooling systems with this safe, sure dry ANCO product. No need for shut-down or manual cleaning. ANCO gives you the most inexpensive, effective way to keep algae and slime out of water lines. Keep cooling systems clean at peak performance with ANCO.



- Dry Chemical
- Non corrosive
- Increases circulation
- Improves heat transfer
- Reduces manual cleaning

ANCO WATER TREATMENT cleans and protects circulating systems from rust and scale for peak operating efficiency.

ANCO CONDENSER CLEANER removes heaviest scale in hours with no fumes, no corrosion, no shutdown.

Buy ANCO for sure profits
Condenser Cleaner—Water Treatment—Algaecide

Anderson
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Consumer Booklet Lists Benefits Of Silver Shield

CLEVELAND—Silver Shield dealer-contractors, wholesalers, and utilities who are members of Indoor Comfort Bureaus are now using a new consumer booklet that describes the specific benefits home owners receive when they buy a Silver Shield guaranteed system.

The booklet is entitled, "When You Buy Heating or Air Conditioning Make Sure It's a Silver Shield Certified Air Conditioning System . . . The Comfort-Guaranteed System."

It will be available for distribution by dealer-contractors in more than 35 metropolitan areas where Indoor Comfort Bureaus are in operation or in process of formation as Silver Shield certifying agencies.

Revolving around the theme of guaranteed comfort and directed to prospective customers, the booklet explains the advantages of Silver Shield certification, outlines in detail what comprises a Silver Shield system, and discusses the certification and guarantee provided by dealer - contractors installing such systems.

An easy-to-read chart covering seven items directly related to winter heating comfort, summer cooling comfort, and winter-summer comfort, as assured by all Silver installations, is also included.

Items covered are uniform temperatures throughout all rooms, floor warmth in all above-grade rooms, constant room air temperatures, uniform temperatures between floor and ceiling, filtered air, humidified air, and dehumidified air.

Large and Small Cooling Picture Good In Charlotte

CHARLOTTE, N. C.—According to John G. Hopping, vice president-industrial engineer of Piedmont Natural Gas Co., the outlook for both large tonnage and small tonnage air conditioning is good.

Hopping reported that as of June 1, Piedmont has 16 large installations totaling 5,340 tons in operation with 1,185 additional tons specified or for buildings under construction. Negotiations are under way and prospects look good on six more jobs totaling 1,380 tons.

An agressive residential and small commercial air conditioning program is being successfully pushed, he noted. In 1961 it is expected that 275 units will be installed.

An interesting factor in Piedmont's operation is the fact that more gas was sold for air conditioning in the summer of 1960 than for all purposes in the summer of 1952.

Frank S. Brady Dies

MEMPHIS—Frank S. Brady, 64, vice president of the Hunter Div., Robbins & Myers, Inc., died here Aug. 1 after a brief illness.

Through-the-Wall Heat Pumps Set for Florida Apartments

FORT LAUDERDALE, Fla. — The $3½-million Atlantic Towers, large cooperative apartment house now under construction here, will include through-the-wall heat pumps.

The 170-unit, 16-story structure is being built by General Builders Corp. of Fort Lauderdale, Inc., a subsidiary of General Builders Corp. of New York City. Completion is scheduled for Dec. 31, 1961.

Electrical system design and product specifications for the management type cooperative were developed by General Electric Co.'s local Miami representatives, and the appliances will be installed and serviced by Hopkins-Smith, Inc. of Fort Lauderdale.

Parkway Towers In Kansas City, Mo. To Feature 3-Pipe Air Conditioning

KANSAS CITY, Mo. — A three-pipe air conditioning system will be a feature of Parkway Towers, now under construction in the Country Club Plaza section of Kansas City.

Trimmed in white brick accented with charcoal panels, the building rises 17 stories above the J. C. Nichols Parkway and the adjoining Millcreek Park.

Heat, humidity, and air conditioning will be individually controlled for each apartment.

In the three-pipe air conditioning system, one line carries hot water, another chilled water, and the third serves as a common return to the boiler and air conditioning machinery.

Throughout the building, the Edward W. Lochman Co., plumbing, heating, and air conditioning contractor, will use more than 100 tons (five carloads) of CW and seamless steel pipe, ranging from ½ to 10 ins. in black pipe and 1¼ to 6 ins. in galvanized pipe.

In addition to the heating and air conditioning systems and the natural gas lines, steel pipe will be used for waste lines, vents, the storm system, and the fire line standpipe system. All is Spang Pipe, made by the National Supply Div. of Armco Steel Corp., it was reported by National Supply.

All pipe for waste lines and vents is being prefabricated in a shop set up on the ground floor of the building.

The Lochman organization, one of the major mechanical contractors in the Kansas City area, has been in business since 1938, it was noted. Charles H. Lochman is manager of the plumbing division, and A. Hancock, Jr., manager of heating, air conditioning, and process work. Charles Lochman has been with his father's firm for nine years and Hancock has been with it for 13 years.

Herbert E. Duncan Associates is the architect for Parkway Towers. Emory White is mechanical engineer. The Spang Pipe was provided by the Industrial Pipe & Supply Co.

Get your copy

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

What do you think makes the Lennox dealer a leader?

Actually there are many reasons—but it starts with a reputation for "quality"

Whether a customer is interested in heating or cooling alone or 365 day air conditioning, Lennox has the *right* equipment at a competitive price. Included in the line are gas, oil, coal and electric heating systems, heat pumps, dual-fuel industrial heaters to 2,000,000 Btuh capacity and air conditioning units from 2 to 25 ton size!

The quality features in Lennox equipment result in fuel savings of about 20%. And this kind of performance helped build the reputation that makes Lennox outsell the next two largest competitors combined!

But there are other important stimulants to success for the Lennox dealer. For one thing, he has a complete line of heating and air conditioning equipment—an economical model for every installation.

Another reason he's prosperous—he's never made to walk alone! There's a superb field force of trained specialists at his disposal—help for so many tasks and problems that may arise. There are special sales and technical schools for his men . . . liberal financing plans . . . the most complete and thorough merchandising programs in the industry. And advertising designed for action!

Are YOU missing these ingredients of leadership and profit? Then write your nearest Lennox factory for the *complete* dealer story.

Don't be satisfied with less than

LENNOX

Heats, Cools, Treats and Moves Air

IN HOMES IN CHURCHES IN SCHOOLS IN COMMERCE

LENNOX Industries Inc., est. 1895—Marshalltown, Des Moines, Ia.; Columbus, O.; Syracuse, N.Y.; Decatur, Ga.; Ft. Worth, Tex.; Salt Lake City, Utah; Los Angeles, Calif. LENNOX Industries (Canada) Ltd.—Toronto, Montreal, Calgary, Vancouver, Winnipeg

NWAHACA Research Indicates

Overhead Distribution Falls Short of Silver Shield Standards Even In South

NEW ORLEANS — "I don't believe that we can count on having overhead distribution systems perform in such a manner that they satisfy the current guarantee requirements for a Silver Shield Heating system . . .

"It seems to me that there is no conceivable way of satisfying the Silver Shield performance guarantee provisions for heating except by use of a perimeter system."

So stated Herbert T. Gilkey, technical director of the National Warm Air Heating & Air Conditioning Association, at the first southern Silver Shield regional conference here.

In summarizing the results of studies conducted in the south last winter, Gilkey said the integrity of the Silver Shield Program and the public's confidence in the program "can be maintained only so long as the guarantee is known to be meaningful.

"The moment a Silver Shield label is attached to a cutdown system, the public loses its confidence in the program, and the program becomes valueless to you.

Protection of Public Is Ultimate Goal

"Protection of the public is, therefore, the ultimate goal of the Silver Shield Program, and the guarantee is the assurance which your customer receives that he can have confidence in you and your labeled systems.

"We realize that the preparation of standards and the establishment of inspections and enforcement procedures have been a difficult problem to you. We hope you realize, however, that it has been at least an equal problem to us.

"Nevertheless, these things are so important and so fundamental to the basic concepts of the Silver Shield Program that we feel we must carry them through even though we should often like to short-cut the procedures which have been established.

"A very good case in point is my experience here in New Orleans and in Shreveport last winter.

"As you know, the Silver Shield Standards Guide states that a perimeter must be used. This requirement was instituted in the belief that only with a perimeter system could the Silver Shield guarantee provisions of temperature balance and temperature gradients be satisfied.

Traveled South To See If Standards Should Be Modified

"Our experience in the north had certainly indicated this, but we did recognize that we might have to review the standards provisions as Silver Shield expanded into other parts of the country. This was the purpose of my trip down here last winter—to determine if and how these provisions might be modified.

"It has been common practice for many years here in the south to use overhead distribution systems. Sometimes the outlets used with these systems are in the high sidewall location. Other times they are ceiling outlets. It is probable that the ceiling-outlet system is actually the more common of the two.

"Quite frankly, our experience with ceiling-outlet systems in the north has not been altogether satisfactory. We have generally attributed this to the fact that we do have colder weather and consequently colder floors. Hence, we did not believe that ceiling - outlet systems would do a Silver Shield job in the northern parts of the country.

"In the south, however, the winter is somewhat milder. Cold floors are not quite so much of a problem. Furthermore, higher air volumes are often circulated through the system because of summer air conditioning requirements.

"It had been suggested to us that some of these situations, when put together into one system, could result in excellent performance. Before accepting these things for Silver Shield installations, however, we had to find out—we had to know—if overhead distribution systems could achieve Silver Shield performance.

"Last January, we therefore investigated the performance of some of your better systems down here. My first impression of these systems was excellent.

Workmanship Was Good

"The workmanship was good, equipment was well installed, the systems were well laid out, and it was obvious that considerable thought and care had gone into both their design and their installation.

"With the help of the members of the Indoor Comfort Bureau of Greater New Orleans and the ARK-LA-TEX Indoor Comfort Bureau, we investigated the performance in seven different installations.

"The homes in which these systems were installed covered a great variety of constructions. Some were new and some were old. Some were located on concrete slab floors and others were located over crawl spaces. Some had 8 or 8½-ft ceilings, while others had 12 to 15-ft ceilings. So far as the systems were concerned, almost all were overhead distribution.

"There was one perimeter-radial system in one of the Shreveport homes, and a modified perimeter system in a modernized installation here in New Orleans.

Several Types of Ceiling Outlets Used

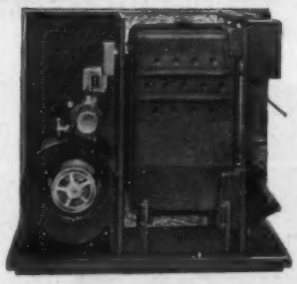
"Several types of ceiling outlets were used—those which might be termed 'center-placed' ceiling outlets were the most common, although in at least one installation some of the outlets were placed at one end of the room and directed the air toward the other. In addition, in one home, on one part of the system there were high sidewall outlets.

"Well, what did we find? (Figure 1) The main thing we were looking for was the temperature variations from the floor level to the 6-ft level. This is the living zone of the house—

NEW FROM MONCRIEF

Assembled and Wired Gas Furnaces

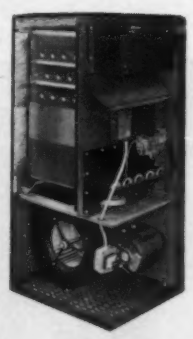
ALL-NEW ASSEMBLED AND WIRED BASEMENT FURNACES FOR REDUCED INSTALLATION COSTS



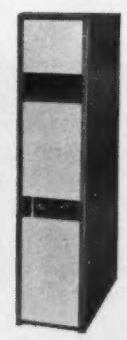
Interior view of new Moncrief Series SA Furnace, showing End-Welded, 16 Gauge Heat Exchanger, Large-Capacity Blower and Sturdy Floor Base with Mounting Channels — Unexcelled Construction.

5 attractively styled sizes are compact and easily handled. 24 Volt Honeywell Controls are standard equipment. Summer Air Conditioning is easily added without changing the big, quiet Blower. 100,000, 125,000, 150,000, 175,000 and 200,000 Btuh.

UPFLOW & COUNTERFLOW UNITS HAVE 24 VOLT HONEYWELL CONTROLS . . . COMPLETE LINE INCLUDES NEW 50,000 BTUH UNIT



Interior Construction of Upflow Furnace

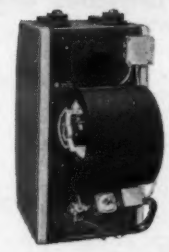


New 50,000 Btuh Upflow Furnace

In addition to the End-Welded 16 Gauge Heat Exchanger, the Large-Capacity Blower and the Solid Cabinet, Moncrief Gas Fired Upflow and Counterflow Furnaces now feature 24 Volt Honeywell Controls — the Combination Fan and Limit Control, the Combination Gas Pressure Regulator, Automatic Gas Valve and Automatic Pilot and the Thermostat with a Built-In Heat Anticipator.

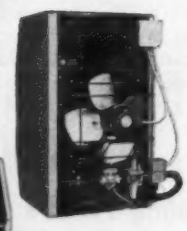
The new 50,000 Btuh Size is only 12" wide—designed to provide the advantages of complete winter air conditioning for apartments, other multiple-dwelling units and motels. Another Moncrief sales builder.

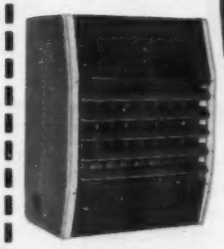
BEST SELLING, EXTRA-COMPETITIVE UNIT HEATERS NOW WITH CENTRIFUGAL BLOWER OR PROPELLER FAN



With Centrifugal Blower for connection of discharge duct

With Propeller Fan for extra-quiet operation





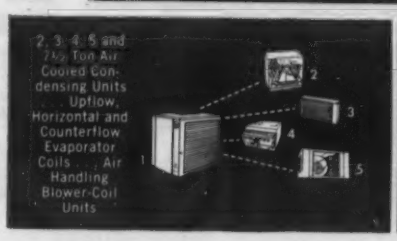
Distinctive, attractive styling for eye appeal

With attractive styling that conceals their rugged construction and quiet operation, Moncrief Unit Heaters have captured a large portion of the market — with prices that make them easy to sell. For installations with ducts and for long air throws, the 6 sizes of these popular units are now available with Direct Drive Blowers — in addition to the quiet Propeller Fans. Extra advantages from Moncrief.

MONCRIEF

THE HENRY FURNACE COMPANY · MEDINA, OHIO

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS


2, 3, 4, 5 and 7½ Ton Air Cooled Condensing Units
Upflow, Horizontal and Counterflow Evaporator Coils . . . Air Handling Blower-Coil Units
1
2
3
4
5

the portion of the house in which the occupants live.

"In this figure, we show the average air temperature differentials measured with high outlet systems here in Louisiana last winter.

"Horizontally we have plotted the difference between the air temperature at the supply outlets and the air temperature at the return intakes. Vertically we have plotted the air temperature differential from the 4-in. level to the 30-in. level and to the 72-in. level.

"One would expect that the air temperatures within a room would be most nearly uniform when the supply air temperature was very close to the temperature of the air in the rest of the room. This proved to be the case, as shown at the left-hand end of the curve. As the supply outlet temperature increased, the temperature at the 72-in. level and at the 30-in. level went up.

"Note at the left-hand end of the curve that the air temperature at the 72-in. level becomes 5° greater than the air temperature at the 4-in level when the difference between supply air and return air is only 8°.

"At the other end of the scale, the temperature at the 72-in. level, 6 ft from the floor, can be 20° greater than the temperature at the 4-in. level.

"I must hasten to add here that this curve does not represent the performance of any one of the houses in which measurements were taken. Rather, it represents something of an average of the data taken in all seven homes. Some were better, some were slightly worse.

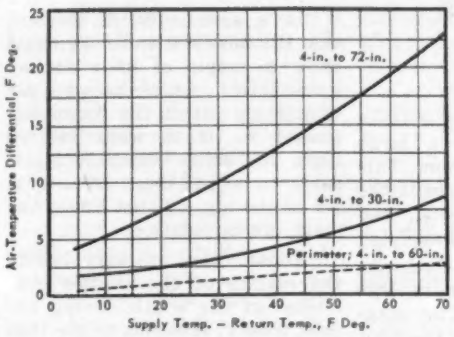
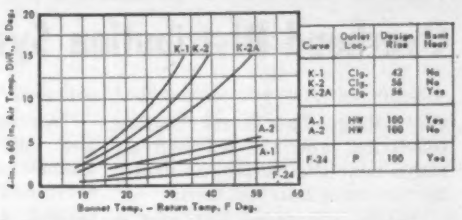


FIG. 1—Average air temperature differentials with high outlet systems, southern climates. January, February, 1961 (slab-floor and crawl-space homes).



Curve	Outlet Loc.	Design Rise	Bsmt Heat
K-1	Clg.	42	No
K-2	Clg.	56	No
K-2A	Clg.	84	Yes
A-1	HW	100	Yes
A-2	HW	100	No
F-24	P	100	Yes

FIG. 2—Air temperature differentials from 4-in. to 60-in. levels in Research Residence No. 2, University of Illinois.

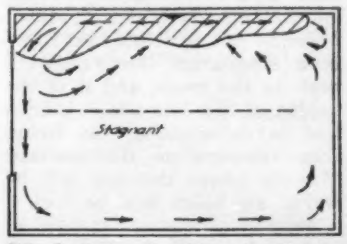


FIG. 3—Room air motion characteristics with ceiling outlet used for heating. (From University of Illinois Engr. Exp. Sta. Bul. 442.)

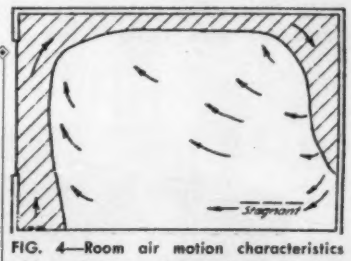


FIG. 4—Room air motion characteristics with perimeter outlet used for heating. (From University of Illinois Engr. Exp. Sta. Bul. 442.)

Can't Count on Overhead Distribution

"Nevertheless, I don't believe that we can count on having overhead distribution systems perform in such a manner that they satisfy the current guarantee requirements for a Silver Shield heating system.

"Down near the bottom of the graph is a dotted line which shows the performance experienced with the perimeter system in Warm Air Heating Research Residence No. 2 at the University of Illinois. Note the vast difference between the perimeter performance and the performance of the overhead systems.

"I must add here that the performance of the one perimeter system investigated in Shreveport was right in line with this particular curve. It seems to me that there is no conceivable way of satisfying the Silver Shield performance guarantee provisions for heating except by use of a perimeter system.

"The next figure (Figure 2) shows results of research sponsored by the association at the University of Illinois.

"Curves K-1, K-2, and K-2a represent the performance of ceiling-outlet systems in Air Conditioning Research Residence No. 4.

"Curve K-1 had the highest air volume — one that would easily satisfy the cooling requirements of the structure. Almost as much air was circulated during series K-2, and it can be roughly described as sort of a minimum cooling air volume.

"K2-a was identical to K-2 except that heat was put into the basement in order to warm the floor.

"Curves A-1 and A-2 refer to high sidewall systems. Note that these are better in performance than the ceiling-outlet systems, a condition which was also observed here in New Orleans. Nevertheless, the high outlet systems are quite marginal in terms of Silver Shield performance.

"Also notice that in all of these particular curves, the temperature differentials are those measured from the 4-in. to the 60-in. level, not to the 72-in. level as stated in the Silver Shield guarantee.

Need for Perimeter System Confirmed

"Finally, we have once again inserted the curve on the perimeter system in Research Residence No. 2. This information would seem to confirm the need for a perimeter system in all parts of the country if the Silver Shield guarantee provisions are to be satisfied.

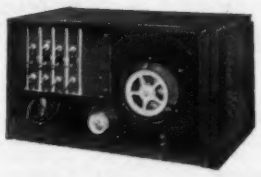
"We now must ask ourselves just why this sort of thing happens. The next figure (Figure 3) shows what takes place in a room when a ceiling outlet is used. Here we have a rather schematic looking room with the diffuser placed in the center of

(Continued on next page)

BETTER FROM MONCRIEF

Electric Winter A. C. Units...Oil Fired Furnaces

A COMPLETE ELECTRIC LINE FOR HORIZONTAL UPFLOW OR COUNTERFLOW INSTALLATION



Above, Electric Winter Air Conditioner in Horizontal position. Below at left, in Upflow position. Below at right, in Counterflow position.

With Moncrief, Electric Winter Air Conditioning is compact, flexible and readily converted to All-Electric Year 'Round Air Conditioning. From a single, small, completely factory-assembled-and-wired package you get big heating and big air handling capacities. The 24 Volt Controls provide sensitive response to temperature change. Moncrief gives you extra Flexibility.

FACTORY ASSEMBLED OIL UPFLOW, BASEMENT & COUNTERFLOW FURNACES ARE EQUIPPED WITH THE MOST WANTED TYPE OF CONTROLS

Interior View of Upflow Furnace

The Combustion Chamber of Moncrief Oil Furnaces is round and the Firebox is the moulded Refractory type — quiet, trouble-free and dependable. In addition, these completely assembled Moncrief Oil Furnaces provide all internal wiring for easy attachment of the Stack-Mounted Primary Control and the Fan and Limit Control in the most advantageous locations. The heavy construction contradicts the competitive price. More for your dollar with Moncrief.

Interior view of Basement Furnace

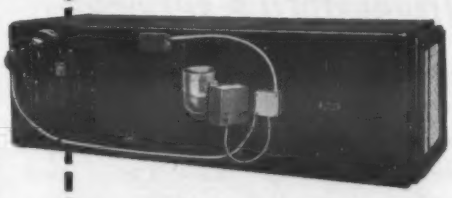
LOW, SLENDER & COMPACT OIL HORIZONTAL UNITS ARE NOW COMPLETELY ASSEMBLED AT THE FACTORY

Moncrief Oil Fired Horizontal Winter A. C. Units are now shipped with the Burner, Firebox and Controls assembled, as pictured below.

Complete lines of both Oil and Gas Horizontal Furnaces are set up at the factory for left hand discharge, but with provision for easy conversion to right hand discharge where desirable.

Extra-capacity, standard equipment blowers make Moncrief Horizontal Furnaces ideal for adaptation to year 'round air conditioning at any time.

With Moncrief, better furnaces at competitive prices add up to lower installed cost.

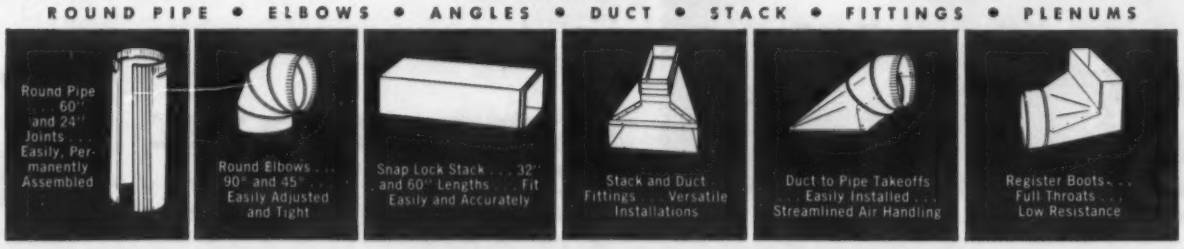


Oil Fired Horizontal Winter Air Conditioner as shipped from the factory, complete with Burner, Firebox, Controls and Wiring Harness installed

CALL YOUR MONCRIEF WHOLESALER FOR MORE OF EVERYTHING YOU NEED

THE HENRY FURNACE **SUREFIT.** COMPANY·MEDINA, OHIO

ROUND PIPE • ELBOWS • ANGLES • DUCT • STACK • FITTINGS • PLENUMS


Round Pipe . . . 60" and 24" Joints . . . Easily, Permanently Assembled
Round Elbows . . . 90° and 45° Easily Adjusted and Tight
Snap Lock Stack . . . 32" and 60" Lengths . . . Fit Easily and Accurately
Stack and Duct Fittings . . . Versatile Installations
Duct to Pipe Takeoffs . . . Easily Installed . . . Streamlined Air Handling
Register Boots . . . Full Throats . . . Low Resistance

Overhead Distribution Systems--

(Continued from preceding page)

the ceiling. This is for heating operation, and the warmed air stays near the ceiling, as shown by the cross hatched area.

"Some air drops out and is cooled as it falls along the window then moves back across the floor and is brought into the general air circulation pattern near the ceiling. Note that there is a stagnation line relatively high in the room, and it is the height of this line which is critical in determining the living zone temperature differentials. The air above the line will be warm, air below will be cool.

"The next figure (Figure 4) shows what happens in a perimeter installation. Here is shown a floor diffuser as a matter of convenience, but essentially the same pattern is experienced with other types of perimeter outlets.

"Air issues from the diffuser and entrains with it a large amount of air in the room. This entrained air moves toward the ceiling, across the ceiling, and drops down the inside wall.

"There is a general clockwise circulation of the air in this particular situation. The stagnation line is very near the floor and is quite localized. Hence, the living zone temperature differentials are quite small, and the air temperature balance within the room is excellent.

Return Location Has Little Effect

"The return location has very little effect on heat performance. If we were to show the return in this figure, it might be located on the righthand wall, either high or low.

"Let's assume for a moment that it's low. If it were, we could show a couple of little arrows going into it, while the main air circulation within the rooms bypassed it. If it were located high, the same situation would exist—it would bleed off a little bit of the air, but not affect the main air circulation.

"These, then, are very briefly the results of the studies conducted in the south during the past winter. It seems to me that there are some decisions to be made regarding standards. These same decisions will affect the guarantee provisions.

"The first decision, and this must be subject to ratification by the Codes and Standards Committee of the association's Marketing Council, pertains to the retention of the perimeter requirements for a Silver Shield heating system.

"If it is decided that other types of systems should be permitted, and if this decision is ratified properly, then we must recognize that the Silver Shield guarantee provisions are going to have to be changed.

"No longer can we say: 'This Silver Shield system is guaranteed to be capable of maintaining the air temperature as measured near the center of each room so that when the thermostat is set at 75°F, the variation of the air temperature measured 4 in. above the floor and 72 in. above the floor will not exceed 5°.'

"Rather we may have to say that: 'The variations of the air temperature measured 4 in. above the floor and 72 in. above the floor will not exceed 10 or 15 or even 20°.' This is a rather weak-sound guarantee provision. It may be realistic and valid, but it is a poor sales tool.

"The other thing you can do is to forget about Silver Shield heating and concentrate on Silver Shield cooling.

"Frankly, we don't yet know exactly what the system requirements should be for such installations. We shall find out this summer, for we do plan to repeat investigations of the type which were conducted here last winter.

"Research data which we have available indicate that overhead systems can be a great deal better for cooling than for heating. We will rely heavily, of course, upon your experiences and practices to guide us.

"Please do not feel that the Silver Shield standards cannot be changed to meet the needs of each Bureau. They can be, they must be, and they will be. On the other hand, we must know exactly where we are going before we make changes. A good example of this occurred also during this last winter.

"The Standards Guide has provided that there must be a perimeter diffuser on each exposed wall of each room. This has become something of a burden, particularly in two-story and split-level construction. Frankly, we didn't know if Silver Shield Guarantee provisions could be satisfied with only one diffuser. Consequently, we investigated to find out what the story would be.

"Although I cannot say yet that the standards have been changed, for the matter is still under consideration, it does appear as if this requirement will be relaxed.

"It will soon be permissible, under certain limited conditions, to provide only one diffuser in each room. This is as it should be, for the investigations conducted showed that good performance, performance which can be guaranteed, is achievable with such installations.

"I cite this example to you in an attempt to indicate that we are not being doctrinaire, stubbort, or arrogant about the standards. Rather, we don't want to approve standards which will leave you, the members of the Indoor Comfort Bureaus, out on a limb.

"We feel that this would be doing you a disservice—it would give you a false sense of security, a false belief in the performance of the systems you are installing. It would leave you wide open to public criticism and ridicule. It would hurt you immeasurably."

here's
how he builds
CUSTOMER
CONFIDENCE
...in his firm, in the refrigerator he services

He's building customer confidence by doing the job *right*, using his specialized service knowledge; by the genuine FSP parts he's using to repair this RCA WHIRLPOOL refrigerator; by the care he's taking, and by his neatness and tact.

And, he's found that more and more customers appreciate and even insist on getting the "real thing". Experience has proved to him that FSP parts cost less in the long run because they fit right, work right, last long—and help avoid those confidence-robbing, profit-stealing call-backs. FSP parts are available through RCA WHIRLPOOL distributors everywhere.

Factory Specification Parts for Whirlpool HOME APPLIANCES
meet the toughest specifications in the industry
FSP

Service Division, Whirlpool Corporation, Administrative Center, Benton Harbor, Mich.

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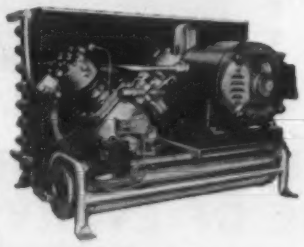
SUPERMARKET OWNERS GIVE FOUR REASONS FOR CHOOSING OPEN TYPE COMPRESSORS

In the first part of a study recently published by *Air Conditioning, Heating & Refrigeration News*, a 107-store supermarket chain revealed these reasons for preferring open type equipment:

- Much longer life
- Closer balance between high and low sides, with more satisfactory operating conditions
- More universal applicability—wide range of capacities; compressor displacement adaptable to new load conditions
- Unsurpassed service history according to actual records

FOUR REASONS WHY SUPERMARKET OWNERS CHOOSE LEHIGH OPEN TYPE EQUIPMENT



- LOW COST
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LEHIGH BLU-COLD COMPRESSORS AND CONDENSING UNITS
¼ H.P. to 7½ H.P. ■ AIR—AIR-WATER—WATER

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LEHIGH

LEHIGH MANUFACTURING COMPANY,
Division of Lehigh, Inc., Easton, Pa.
Manufacturers of Hermetic and Open Type Condensing Units; Compressors; Receivers; Condenser Receivers.

Frigikar Plans Expansion In Transport Refrigeration, Names Kirkpatrick

DALLAS — Bert J. Mitchell, president of Frigikar Corp., developer of automobile, truck-cab, and bus air conditioning, has disclosed plans for extensive enlargement of production facilities here to permit broad expansion of the company's transport refrigeration adjunct.

At the same time, Mitchell revealed that new low-priced, high-capacity cargo refrigeration units will be in production at Frigikar within 90 days.

He announced that Henry O. Kirkpatrick, nationally recognized mobile refrigeration authority, has been named vice president and manager of the expanded department.

Kirkpatrick

Two of the company's initial mobile refrigeration models, prototypes of which are now nearing completion under Kirkpatrick's direction, were described by Mitchell, as 1) a relatively low-priced, high-capacity unit for city delivery trucks in the medium temperature range; 2) a trailer unit suitable for maintaining down to -20°F in properly insulated trailers.

Other FrigiKing refrigeration models in the production stage and on the drawing board, will have applications to railroad reefer cars, trailer-on-flat-cars, perishable cargo containers, and trucking fleets, especially carriers of meat, dairy products, and all frozen foods.

Price range of the entire line, which will be marketed under the company's trade name, "FrigiKing," will be $1,500 to $4,000 per unit.

The forthcoming FrigiKing transport refrigeration units, of which there eventually will be some 45 different models "to satisfy the industry's most stringent temperature requirements," are the end results of an intensive program of research and experimentation that has been in progress here for nearly five years, Mitchell disclosed.

He said that "FrigiKab," Frigikar's nationally distributed air conditioning unit for truck-cabs, and "FrigiBus," the company's internationally marketed transit bus air conditioning system, also were developed during the same five-year period.

Mitchell said the refrigeration units the company has developed "will perform above the requirements of the code of AFDOUS (Assn. of Food and Drug Officials) which requires a zero degree maximum temperature for transporting frozen foods."

The newly-developed FrigiKing mobile refrigeration models are "mechanically simplified, lightweight, ruggedly constructed units," Mitchell asserted.

"Utilization of Frigikar's coil-making facilities will permit a considerable manufacturing cost reduction."

Kirkpatrick said another engineering technique that will be an exclusive feature of the upcoming FrigiKing trailer units is the use of electric heat for winter heating protection of perishables; the same heat being utilized for automatic defrosting.

"With our new electric concept, heat and defrost are provided through use of only the engine generator, without running the refrigeration units," Kirkpatrick said.

Frigikar's new trailer units will also contain, as standard equipment, "an ingenious control system incorporating a thermostat that will automatically switch over from cooling to heating, or vice versa, to maintain desired temperatures for the perishable commodities being transported."

Distribution will be on an international scale. In the U. S., Mitchell plans wherever possible to make use of the trained sales and service personnel which has sold and maintained the company's FrigiKing auto air contioning units and FrigiKab units.

Arctic Traveler Sales Double In 6 Months

MONTGOMERY, Ala.—James J. Hagan, president of American Mfg. Co. here, has announced that sales for the company's Arctic Traveler Div. have doubled in the first six months of this year.

An Arctic Traveler spokesman, in commenting on Hagan's report, said this sales gain "can be attributed to the industry's acceptance of the Arctic Traveler line of all electric and mechanical refrigeration systems which are capable of maintaining temperatures as low as -20°F in trucks and trailers.

"Another factor is Arctic Traveler's stepped up sales effort which was launched late in the fall of 1960. An aggressive campaign was initiated to increase sales outlets and service organizations. Also, the company embarked on an aggressive advertising and public relations program.

"Both ventures are now bearing fruit and projected sales for the balance of this year indicate a year-end increase of well over 100%."

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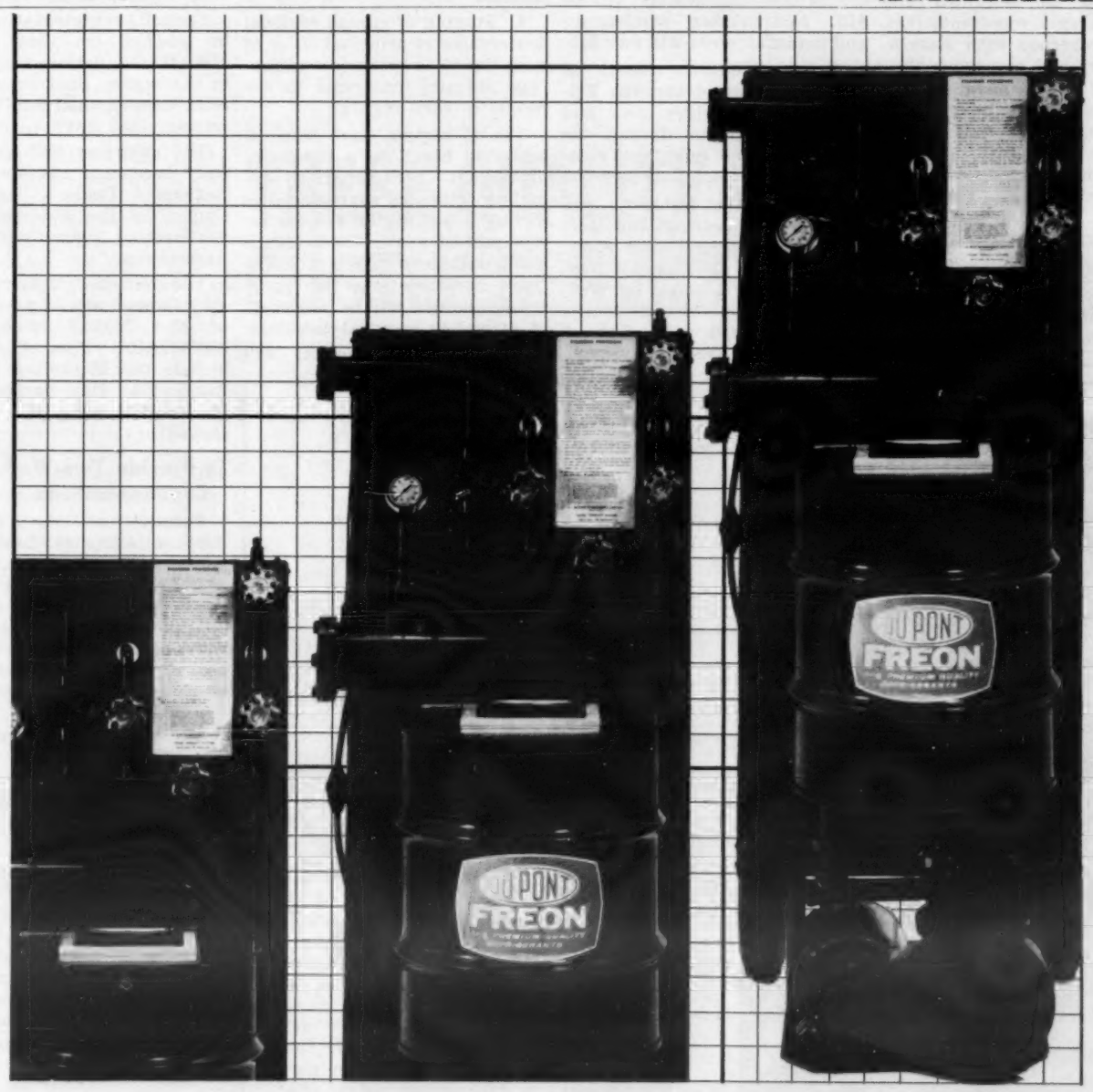

RAISE PROFITS

with this new Du Pont power-cleaning unit for burnouts

Call-backs on refrigeration burnout jobs can run up costly hours of non-profit service time. Now, however, you can help eliminate costly call-backs by doing a thorough cleaning job the first time—with a new power-cleaning unit designed by Du Pont. This new unit does the job not by replacement or simple flushing, but by thorough recirculation. It uses Freon-11*, the most effective selective solvent available for oil, sludge, or grease.

Complete burnout cleanup can be accomplished quickly and efficiently in just eight short steps with this practical, mobile unit. And when you recharge the system, you'll find Du Pont's improved lightweight "Zephyr" cylinders make that job a whole lot easier, too.

To increase your profits and improve your reputation for dependable service, use this cleaning unit for burnout jobs. Ask the helpful air conditioning and refrigeration wholesaler near you who sells "Freon" for all details.

FREON® premium quality REFRIGERANTS

DU PONT

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

*FREON and F- followed by numerals are Du Pont's registered trademarks for its fluorocarbon compounds.

FHA Commissioner To Speak

NWAHACA Announces Program for Annual Convention Nov. 8-10 In Chicago

CHICAGO — Details of the 48th annual convention of the National Warm Air Heating & Air Conditioning Association were previewed here recently at the first meeting of the Chicago convention committee.

One of the highlights of the convention, to be held Nov. 8-10 in the LaSalle hotel, will be an address by Neal J. Hardy, commissioner of the Federal Housing Administration, according to James M. Martin, managing director of the association.

He will speak at the luncheon on Thursday, Nov. 9.

Official opening of the convention will be at 1:30 p.m. Wednesday, Nov. 8. First session, open to delegates and manufacturer representatives, will be concerned with association affairs and management.

Reports will be made by the association's councils and officers. All manufacturers present will have the opportunity to discuss the association's programs, activities, and future operations.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Election of officers and board of trustees will also take place at this session.

On Thursday, two simultaneous sessions, open to all industry members, will start at 9:30 a.m. and continue through to 5 p.m. One will cover technical and application engineering-findings, while the other will cover all aspects of marketing.

On Friday, the entire session will be devoted to dealer-contractor problems. This will be part of the Region 3 conference, pilot meeting for 10 other regional parleys to be held early in 1962.

Registration fees for association members and non-member contractors and dealers will be $15. Non-member wholesalers and manufacturers will pay $25.

The association's board of trustees will meet through Friday. It will consider ideas and expressions made during the convention, and reports of committees and association councils.

The Research Advisory, Application Engineering, and Marketing councils will meet starting at 9 a.m. on Tuesday, Nov. 7, winding up at noon on Wednesday. Executive and finance committees will meet from 9 a.m. to noon, Wednesday.

Area Served by Each Regional Council

Alaska is in Region 10 and Hawaii in Region 11.

NWAHACA Plans 4 Major Steps--

(Continued from Page 1)

tives. The cabinet will serve as a recommendatory right arm to the NWAHACA board of trustees.

4. Staging of annual regional conferences in principal cities of each region to bring convention-type industry programs to the people of each region.

The 11 regions have been established based on a similarity of market characteristics, prevailing climate characteristics having a bearing on system design problems or methods identifiable with each region, and distance considerations for industry people who will be interested in attending regional meetings.

Each regional council will have 15 representatives for the first 100 dealer-contractor members of NWAHACA in the area, and three for each additional 100 or fraction thereof.

Council representatives will be elected by vote of the NWAHACA dealer - contractors in the region. Each council will elect its own chairman and secretary.

The chairman will automatically become a member of the National Dealer's Advisory Council of the National Warm Air Heating & Air Conditioning Association.

The National Dealer's Advisory Council will be made a part of the Council structure of NWAHACA. Present Councils include the Marketing Council, Application Engineering Council, and the Research Advisory Council.

To Provide Two-Way Communications

Purpose of the National Dealer's Advisory Council, together with the Regional Dealer's Councils which it represents, is to provide two-way communications between the grass-roots of the industry and the administrative and executive functions of National Warm Air.

Through their regional councils and the National Dealer's Advisory Council, the industry in every section of the nation has a direct avenue for expressing its most pertinent and immediate needs to the association, its councils, and board, according to Gurney.

And through these councils, NWAHACA can transmit back to the grass-roots the latest in information, methods, and materials which have been developed to meet these needs.

Purpose of Cabinet

Purpose of the All-Industry Cabinet is to reflect industry attitudes toward activities and projects proposed and instigated by the several working councils of the national body.

The annual Regional Conference program is being instituted as a means of bringing the association's technical, research, sales promotion, marketing, public relations and business management studies and materials directly to each dealer-contractor in the industry — within a short distance of his home town.

"The Regional Conference program is a direct outgrowth of the association's experience in past years with the Indoor Comfort Conference program and, more recently, the Silver Shield Program, wherein the association has worked directly with the dealer-contractors in technical training, sales promotion, and management development activities sponsored by the association," explained Gurney.

"These regional conferences will be the equivalent of bringing the annual convention of the National Warm Air Heating & Air Conditioning Association to each of the 11 regions," he stated.

"Few dealer-contractors wish to travel more than 300 to 500 miles to attend a convention. The result that regardless of where we hold our annual national meeting, only those dealer-contractors within immediate proximity of the convention city get to hear the information presented. Now, we will take the convention infor-

NOW...

BUY A CLEANING UNIT DIRECT FROM THE MANUFACTURER

You've read about, heard about—and maybe even seen—one of the new Du Pont cleaning units. These new units *completely* pressure-clean a refrigeration system after a burnout.

Each unit comes complete with easy-to-follow instructions that make clean-up after burnout as easy as A-B-C. You can have your choice of filter-drier: Henry, McIntire, Sporlan, Mueller.

Prices will be submitted upon request—fob Wilmington, Delaware

Why not order . . . now?

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14th & Poplar Streets

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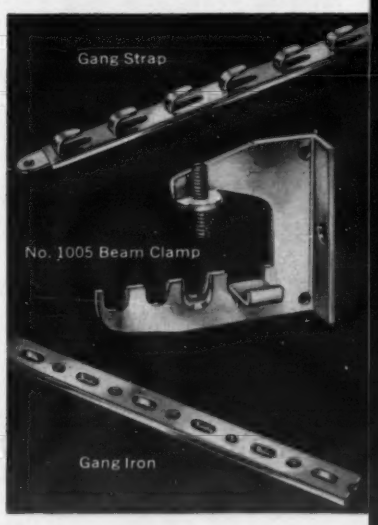
Wholesaler Inquiries Invited — Standard Trade Discounts

DESIGNERS!
ENGINEERS!
MANUFACTURERS

Cut installation time with

MINERALLAC

Gang Strap and Beam Clamp Tubing Supports for the Air Conditioning and Refrigeration Industry



MINERALLAC GANG STRAP

Strap will support six ¼" O.D. tubes, or used in multiple for more than six ¼" tubes. Can also be used in combination with No. 11 Minerallac Jiffy Clip for supporting five ¼ O.D. tubes and one ⅜" O.D. tube. Made of 2 Gauge U.S.S. cold rolled steel, one-half hard zinc plated. Available in 6" and 30" lengths.

MINERALLAC NO. 1005 BEAM CLAMPS

Clamp will support three ¼" O.D. tubes or two ¼" O.D. and one ⅜" O.D. tubes, in various positions on beams. Can also be used in combination with Minerallac No. 505 Gang Strap. Made of 15 Gauge U.S.S. cold rolled steel, one-half hard, zinc plated. Comes complete with set screw.

MINERALLAC GANG IRON

Ideal for supporting single or multiple lines of tubing or conduit. Supports any sized tubing or conduit when used with properly-sized Minerallac Jiffy Clips. Made of ⅛" x 1½" cold rolled steel, Parkerized for added protection against rust and corrosion. Available in 5 foot and 6 foot lengths.

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LITERATURE OR SAMPLE ON REQUEST

MINERALLAC *Electric* COMPANY

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mation to all the dealers across the nation."

Gurney said that working committees are currently planning the first organizational steps in preparation for the regional conferences in each city. In September, a NWAHACA staff representative will meet with the regional committees to complete details for the conference scheduled for their regions.

Wholesaler members and representatives of manufacturer members located in each area will serve on these regional committees together with dealer members in arranging for these regional conferences.

The first regional conference will be on Nov. 9 and 10 in Chicago (Region 3), concurrent with the association's 48th annual national convention.

Other regional conferences will be held in Boston (Region 1), Jan. 22-23; Harrisburg (Region 2), Jan. 25-26; Los Angeles (Region 11), Feb. 15-16; San Francisco (Region 10), Feb. 19-20; Denver (Region 9), Feb. 22-23; Dallas (Region 7), March 22-23; Atlanta (Region 6), March 26-27; Richmond (Region 5), March 29-30; Kansas City (Region 8), April 9-10; and Minneapolis (Region 4), April 12-13.

Each initial regional conference will be a 1½-day session. Dealer - contractors attending will cast their votes for members of their regional councils and have an opportunity to express their ideas and suggestions to those elected.

The first day's program will also include a technical and application engineering session, while the second day will be devoted to sessions on marketing, sales training, and business management methods.

As the Regional Conference program develops through the years, Gurney explained, they will be even more closely tailored to provide the exact information needed by dealer-contractors for application to their own businesses.

Grass Roots Program Result of 1960 Meeting

The association's new grass-roots program grew out of an exploratory meeting of its officers and representative dealer-contractors in May, 1960.

Purpose of the meeting was to discuss ways in which the association might increase its services to the industry's dealer-contractors and enlist their added support and assistance.

For fast action dealer-contractors at the exploratory meeting recommended establishment of a Dealer Advisory Council to represent the viewpoint of the association's dealer members on activities related to dealer interest and participation, with the privilege of reporting direct to the trustees.

The board approved such a program at the last annual meeting and issued instructions to immediately start forming the National Dealer's Advisory Council, as well as the Regional Councils. With the full further approval of the Board of Trustees, this plan was then expanded to provide for Regional Conferences as well.

Currise & Carlson To Handle Nesbitt

PHILADELPHIA — The appointment of Currise & Carlson, Indianapolis sales firm, to handle the Nesbitt line of heating, ventilating, and air conditioning equipment in Indiana was announced by W. D. Widerman, vice president in charge of sales, John J. Nesbitt, Inc.

Widerman noted that both principals of Currise & Carlson served as sales engineers for American - Standard Industrial Div. before forming the new company. The firm plans to open another office in either Fort Wayne or South Bend next January, at which time they will handle the complete Nesbitt line including school house products.

Widerman also noted that this is the first of a proposed 50 such appointments to be made during the next six months over the United States. This is in keeping with Nesbitt's over-all expansion program.

Installed Cost of $245,031

Shreveport Air Conditioning Dept. Issued 84 Permits During July

SHREVEPORT, La.—The air conditioning department of the city of Shreveport issued 84 permits with a total equipment and installation cost of $245,-031, during July, Harold Thompson, newly appointed air conditioning inspector, reports.

Thirty one of the permits were for year-round residential air conditioning and heating units and 12 for commercial year-round units. Six residential and one commercial air conditioning permits were issued, along with 25 residential and no commercial heating permits, it was explained.

Permits were given out for three commercial replacements, one residential replacement, four alterations and/or additions, and one refrigeration installation.

The air conditioning department made 168 inspections and surveys during July.

July totals compared with 108 permits issued in June with a total equipment and installation cost of $216,195.

Largest commercial permit for July amounted to $62,600 to install air conditioning and heating in the Spartan Store at 1610 Kings Highway.

Largest residential permit was issued to Arkansas-Louisiana Gas Co. for $3,886 to install air conditioning and heating for W. C. Rasberry.

One-hundred sixty-eight inspections and surveys were conducted in July.

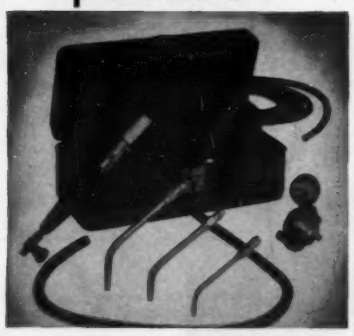
Air-Bearing Motor 'Will Run Indefinitely, Never Needs Oiling'

WESTBURY, N. Y.—A new type of air-bearing motor with "extraordinary characteristics and a range of applications from missiles to household refrigerators" is going to be produced by IMC Magnetics Corp., Simon Saretzky, president, announced recently.

IMC, which also has divisions in Maywood, Calif., and Phoenix, Ariz., makes a variety of fractional horsepower motors, blowers, and components for aircraft, missiles, and computers.

Briefly summarized, the new motor will run indefinitely, never needs oiling, can spin 5,000 times in the flick of an eyelid, and works equally well in exereme low and high temperatures, Saretzky explained in his announcement.

BUILD YOUR BUSINESS ON $43.00!



Install • Service • Find and Fix Leaks with the

PREST-O-LITE

Refrigeration and Air Conditioning Outfit

This single compact kit costs only $43, yet contains every essential piece of equipment for your work. You get three interchangeable open-flame stems to provide the right air-acetylene flame for soldering, brazing, or heating. Fit the sensitive leak detector stem to the same torch handle, and you can pinpoint the tiniest halide gas leaks—as little as 100 parts in 1,000,000 parts of air. Compare that with soapy water!

In one sturdy carrying case, the kit also includes an adjustable gas pressure regulator, torch handle, and hose—everything for the installation, repair, and everyday maintenance of all types of refrigeration and air conditioning systems. See your local *Prest-O-Lite* dealer. Or write Linde Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y.

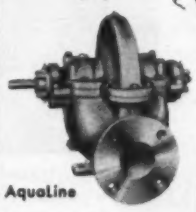
LINDE COMPANY UNION CARBIDE

"Linde," "Prest-O-Lite," and "Union Carbide" are registered trade marks of Union Carbide Corporation.

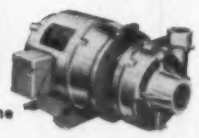
THESE QUALITY PUMPS CUT COSTLY SERVICE CALLS

PEERLESS PUMPS

PEERLESS END SUCTION AND SIDE SUCTION AIR CONDITIONING PUMPS COST LESS—LAST LONGER



AquaLine



Fluidyne

PEERLESS AQUALINE® Pumps are available in sizes to 8-inches. Capacities to 2600 gpm, heads to 280 feet. Temperatures to 250°F. Horizontal split case design allows quick inspection without disturbing piping.

PEERLESS FLUIDYNE® Pumps are compact end-suction design. Redi-Packed in 22 sizes from 1 x 2 x 6 to 2½ x 3 x 10, for immediate shipment. Heads to 230 feet, capacities to 300 gpm, motors from 1 to 15 hp.

If there is a key word to describe Peerless Pumps, that word is QUALITY. You'll find it in the way the pumps are designed. You'll find it in the way the pumps are made. And you'll find it most apparent in the way these pumps operate. Remarkably long trouble-free operating records are routine with these better-made pumps.

But QUALITY is just the start of a long list of important features that recommend the Peerless AquaLine and Fluidyne line of pumps for your water handling jobs. There's immediate availability from ready-to-ship stocks. Complete hydraulic coverage for every type of application. Compact streamlined design that gives you space-saving good-looking layouts. And fast, on-time service from a network of warehouses and field offices.

ATTENTION DEALERS: A limited number of Peerless AquaLine and Fluidyne pump dealerships are available. Please write for complete information.

Putting Ideas to Work

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2005 Northwestern Avenue, Indianapolis 8, Indiana
Gentlemen: Please send me immediately:
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☐ Bulletin B-2100 on Peerless Aqualine Pumps.
☐ Name and address of nearest Peerless Dealer.

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Address _____
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State _____

Non-Destructive Testing Of Condenser Tubes

By C. L. Bulow,
Materials Engineer, Bridgeport Brass Co.

SCIENTIFICALLY precise non-destructive testing has grown tremendously in importance as a quality control tool within the last decade. Presently, four methods are widely applied by tube mills to assure that tube meets purchaser specifications: eddy current, Probolog, ultrasonic, and dye penetrant.

It has been repeatedly demonstrated, for example, that eddy current inspection is capable of detecting and rejecting tight fire cracks, seams, splits, which are almost invisible to the human eye.

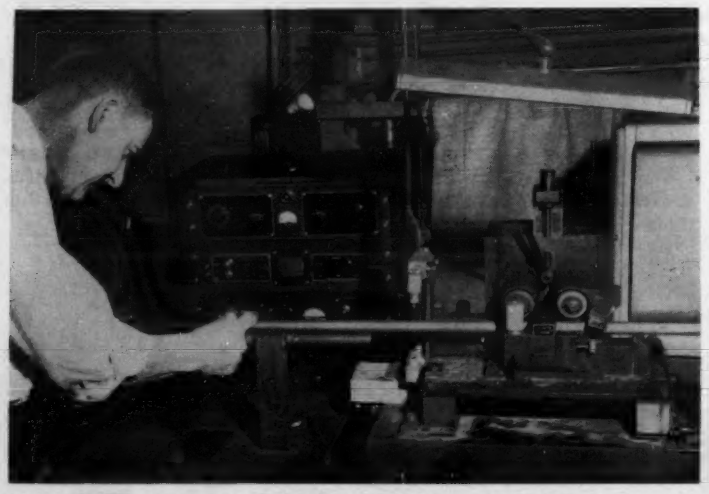

FIG. 1—With eddy current testing equipment, up to 600 fpm of copper tube can be inspected for dents, splits, and cracks. Basis for this type of testing is magnetic induction. A magnetic field directed by coils induces concentric eddy currents within the metal being tested. In a symmetrically shaped piece of metal, such as a tube, the distribution of the lines of force is uniform. When the symmetry is distorted by a dent, split, lap, crack, seam, etc., a change in magnitude and phase of these currents occurs in the area immediately adjacent to the flaw. The magnitude of this distortion varies with the size of the flaw. (Fig. 2.)

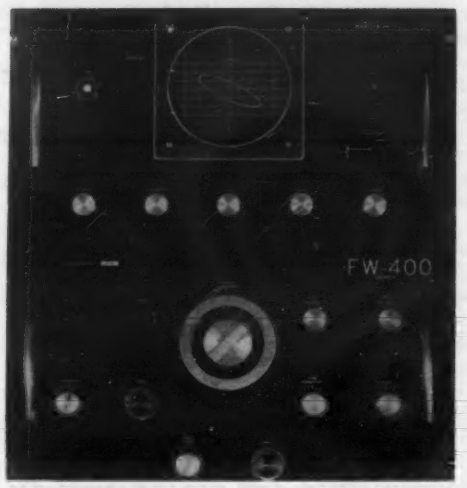

FIG. 2—The presentation of a tube defect is frequently made on an oscilloscope. A horizontal straight line indicates good material. A tilted, open elipse, as seen here, shows that a defective tube is in the test coil.

FIG. 3—A completely automatic tester includes a strip chart pen recorder for permanent charting of the scope pattern, audible alarm panel, and a time delay circuit for marking of defective areas.

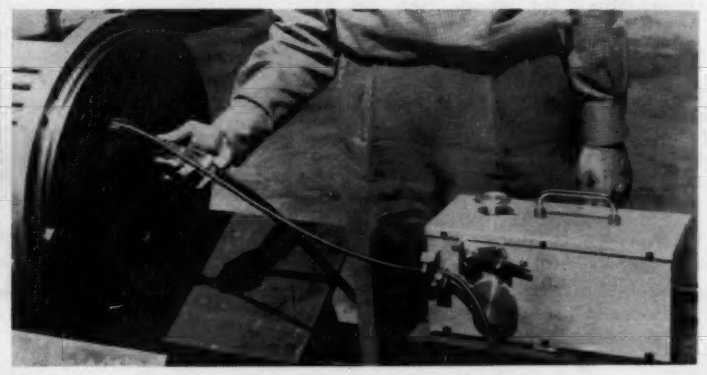

FIG. 4—Similar in principle to eddy current testing, the Probolog unit, devised by Shell Development Corp., is well suited for field inspection of tubes in heat exchangers and condensers and coolers. The Probolog consists of a probe, an insulated cable or lead, and interpretive instrumentation containing a recording device. Chief difference between Probolog and eddy current testing is that instead of passing tube through the inspection coils, the inspection coil—in the form of a small probe—is drawn through the tube.

FIG. 5—Attached to an insulated head, the Probolog head is inserted in the copper tube with an air gun. The lead transmits the test signals to the instrument and provides a means of pulling the probe through the tube. A set of electrically operated rollers draws the probe at a constant rate of speed.

FIG. 6—Ultrasonic testing devices consist of a probe activated by an oscillator. As the crystal probe contacts the surface, ultrasonic sound waves are converted into thickness readings on the calibrated scale. Ultrasonic testing apparatus is available for measuring thickness, and for detecting laminar flaws in tubings, forgings, and extrusions of aluminum, brazed assemblies, and clad or bonded metals.

Developed primarily for surface inspection, dye penetration is used to detect cracks, seams, and laps or other continuous line defects which are open to the surface of tubes. The test is conducted by thoroughly cleaning the tube and painting, spraying, or immersing it in a fluorescent dye solution.

After the surface has been wiped, it is dusted with a developing powder to draw out the penetrant. The surface is then examined in a darkened room under ultraviolet light.

Any dye drawn out by the developing powder from surface inperfections displays a bright orange or yellow fluorescent glow.

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Mathes Questions Answered-

(Continued from Page 1, Col. 2)

also published in the latest bulletin of the Dallas Better Business Bureau.

The main points of the Republic Air Conditioning Div.'s future plans, according to Stevens, are these:

'Alluring, Romantic, Sexy' Room Units

1. Introduction of a 1962 line of room air conditioners that will be "alluring, romantic, and sexy," and which will offer the "mostest for the leastest." The new units will be merchandised through department stores and discount houses.

"We're going to make merchandisers of air conditioners of the top merchandisers, and cut off the little dealer who has to have concessions that the big fellow pays for," Stevens asserted.

"The room units will be sold on a no-buy-back basis, and will carry a one-year standard warranty with an additional four-year warranty which will be carried by an insurance company, so the poor customer doesn't get stuck if the dealer goes out of business."

2. A complete line of central units and heat pumps, probably through 20-hp, will be offered for sale only through "contractors who can offer the kind of engineering and installation service that will insure satisfactory service."

Dealers and contractors handling the central units will be serviced through Republic-Transcon depots located in Chicago, Los Angeles, Portland, Ore.; Erie, Pa.; and Atlanta.

Stevens built a reputation as a slam-bang low-price merchandiser in the water heater field. He claims his firm is the leading seller of water heaters.

'Former Top Dogs Now Bottom Frankfurters'

Of his reputation in that industry, he says, "Sure we turned the market upside-down; former top dogs are now bottom frankfurters. And if you can find any manufacturer who doesn't think I'm a 14-karat ....., let me know, and I'll take inventory of myself. And you can quote me."

One prime contention of the board chairman is that present air conditioner prices are "inflated by such things as trips abroad for dealers." He insists that his merchandising concepts "will bring order out of chaos in the air conditioning industry"

Present Room Unit Sales Policy To 'Clean Up Inventory'

Republic has been accused by some of "dumping" former Mathes room air conditioners in Texas. Steven's answer: "We are moving out all Mathes units at cost. When we start with our new units, it will be with a clean slate." The promotion "also destroyed the myth that air conditioners can't be sold after July 4," Stevens said.

According to Starnes, 80% of the former Mathes Div.'s production machinery has already been transferred to the new Republic air conditioning plant in Dallas. "We expect to be in production with our new units by Sept. 15, certainly no later than Oct. 1," he said.

In a parting comment on the warranty situation, Stevens stated that Republic-Transcon has successfully sold water heaters "with a 10-year warranty that we've had no trouble backing up."

In publishing in its most recent bulletin the company statement on warranty policy, The Better Business Bureau of Dallas, Inc. said that "The Republic Air Conditioning Co. will honor warranty obligations outstanding on Mathes room air conditioners under a strict interpretation of warranty provisions, although there may be a delay of a few days or months in obtaining an exchange of scarce parts as the company moves from Marble Falls to Dallas.

The bulletin further said that "the appearance of a two-page newspaper advertisement of Mathes room air conditioners in Dallas stimulated public contacts with the BBB by both prospective buyers and by owners of Mathes units who have complained of inability to secure parts under warranties covering their equipment."

Republic-Transcon Warranty Statement

To "dispel some of the confusion concerning the company's policy with respect to warranties on air conditioning equipment," said the bulletin, Republic - Transcon Industries, Inc. issued the following statement:

Republic-Transcon
Industries, Inc.
Beverly Hills, Calif.

"On June 1, 1961, Republic Air Conditioning Co., a division of Republic-Transcon Industries, Inc., acquired the assets only of the 'Mathes Company.' It is our desire to evaluate and finalize all disputes and/or all claims pending under the former policies of the 'Mathes Company.'

"Accordingly, we wish to explain that any obligation expressed in any Mathes warranty certificate, is limited to the replacement (exchange) of defective component parts, provided such defective component parts were, in Mathes' final judgment, actually defective in original material and workmanship.

"Those warranties provide also that such component parts must be shipped to the factory, freight prepaid, and, if after inspection they are found to be not only defective but also defective as to original material and workmanship, then a new, repaired, or re-manufactured component part or like or similar design and capacity may be shipped in exchange, F.O.B. factory, freight collect, to the original purchaser of the air conditioner.

"The only responsibility that our company may assume under those certificates of warranty must be strictly limited by the terms noted above. We cannot be responsible for labor, freight, or the price or cost of parts furnished by any distributor, jobber, dealer, or others.

"May we also point out that any reference in those warranties or this letter to the 'original purchaser' is construed to mean such person, firm, or corporation for whom the Mathes air conditioner was originally installed for use."

Republic-Transcon
Industries, Inc.
JAMES R. LOCKWOOD,
Executive Vice President

Republic-Transcon Industries, Inc., was formed Feb. 1, 1960, on consolidation of Republic Appliance Corp. and Trans Continental Industries, Inc. It manufactures glass-lined gas and electric water heaters, gas and electric clothes dryers, garbage disposals, porcelain enamel architectural panels, porcelain enamel and plastic outdoor signs, and other major appliances.

Total sales have increased from approximately $8 million in 1958 to $15,600,000 in 1960, and the company estimates 1961 sales will run about $30 million.

"Republic Appliance Corp. was outgrowth of Republic Heater Corp., formed in Los Angeles in 1937 and purchased by present management in 1948.

"In 1955, Odin Stove Mfg. Co., Erie, Pa., acquired Republic Heater Corp. with present management retaining control. Company reorganized as Republic-Odin Appliance Corp.

"In 1957, Republic-Odin acquired assets of Hammel Furnace and Air Conditioning Co., Culver City, Calif. Hammel consolidated with Republic-Odin.

"In 1958, company acquired all outstanding stock of Fowler Mfg. Co., Portland, Ore.

"In May, 1959, Republic Appliance Corp. formed to acquire all operating assets of Republic-Odin Appliance Corp.

"Trans Continental Industries, Inc., was formed in Michigan in 1924 as Detroit Hardware Mfg. Co. Name was changed in 1956.

"On Feb. 1, 1960, Trans Continental Industries issued 2,400,000 common shares, plus 40,000 shares as finder's fee, for all capital stock of Republic Appliance Corp.

"Control passed to management of Republic Appliance Corp. and Trans Continental management relinquished all responsibilities with new company. Name changed to Republic-Transcon Industries, Inc. Republic Appliance Corp. absorbed and made a manufacturing and sales division.

"On April 1, 1960, Republic-Transcon Industries, Inc. issued 131,830 common shares for 99.7% control of Texlite, Inc., Dallas, manufacturer of porcelain enamel and plastic outdoor signs and wall panels.

"On March 30, 1961, company acquired from Gamble-Skogmo, Inc. all outstanding stock of Western Tire Auto Stores, Inc.

"On June 1, 1961, company acquired assets of The Mathes Co. Div. of Glen Alden Corp. in exchange for 750,000 shares of Republic-Transcon common stock and a $2,000,000 four percent (4%) note payable in 90 consecutive monthly payments."

MEN WHO WILL GUIDE the destinies of the Republic Air Conditioning Div. of Republic - Transcon Industries, Inc. are (l. to r.) C. J. McDonald, chief engineer; Robert Starnes, president, Republic Air Conditioning Div., and former head of Mathes air conditioning; Milton J. Stevens, chairman of the board, Republic-Transcon Industries, Inc.; Ed Schwartz, vice president, engineering.

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MANUFACTURERS' AGENT covering northern California including Kern and San Luis Obispo counties and all of Nevada with the exception of Clark County with offices in San Francisco, San Jose, Fresno, Sacramento and San Rafael, California would like to take on a line of cooling towers, air cooled and evaporative condensers. Now handling a line of refrigeration and air conditioning equipment through 150 tons. BOX A6819, Air Conditioning, Heating & Refrigeration News.

BROAD PRACTICAL experience in air conditioning (direct expansion and chilled liquids), air and hydronic heating, and commercial refrigeration. Experience includes application engineer, service manager, and training of personnel at manufacturing, distributing and contracting levels. Desire new association at either level. Member ASHRAE 15 years, RSES 23 years. BOX A6824, Air Conditioning, Heating & Refrigeration News.

EXPERIENCED HEATING and air conditioning contractor in distressed area, operated own business for last eight years, seeking position with wholesaler or manufacturer. Broad experience in sales, management, controls, layout and all phases pertinent to domestic and commercial heating and cooling. BOX A6827, Air Conditioning, Heating & Refrigeration News.

MECHANICAL ENGINEER age 30, registered. Energetic and aggressive salesman. Experienced in design, sales, and installation of all type systems through the complete Carrier UEO line from residential to multi-story. Reasonably fluent in Spanish. Desires challenging position with a future requiring imagination and initiative. BOX A6831, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

MANUFACTURERS' REPRESENTATIVES: welding alloys, contact distributors 300 mile radius Chicago. Call Mr. Robinson, August 21st, 3-7 P.M., WH 4-4129. Other areas write AMERICAN BRAZING ALLOYS CORP., Box 11, Pelham, New York.

LABORATORY TECHNICIANS — Experienced in the testing of air conditioning equipment for second and third shift operations. Permanent positions with well-established, employee-owned, independent organization serving large industry groups. Good pay plus shift bonus and recognition of responsible personal performance. Send resume to ELECTRICAL TESTING LABORATORIES, INC., New York 21, New York.

MANUFACTURERS' REPRESENTATIVE: to sell dealers and distributors a trouble-free line of automatic ice cube machines. Some choice areas still open. Contact: QUALITY MANUFACTURING CO., P.O. Box 71, Chilton, Wisconsin. Phone 517, giving references, experience, other lines handled, territory covered or desired.

SALES ENGINEER, technical graduate or equivalent with air conditioning and refrigeration experience. Must be interested in calling on refrigeration and air conditioning manufacturers and jobbers. Starting salary based on experience. Write or call Bridgeport Thermostat Division, ROBERTSHAW-FULTON CONTROLS COMPANY, 155 Hill Street, Milford, Connecticut. Phone number TRinity 8-1721, extension 271.

MAJOR MANUFACTURER of heating and cooling equipment has requirement for an experienced sales engineer for assignment in the Des Moines, Iowa area. Send complete resume to A. J. Gilbreath, Regional Sales Manager, WESTINGHOUSE ELECTRIC CORPORATION, Air Conditioning Division, Box 3426, Merchandise Mart Plaza, Chicago 54, Illinois.

ENGINEER WITH experience in refrigeration and air conditioning required by well known Midwest manufacturer to assist in development, application, and placing in production of new equipment. Advise education, marital and military status, employment history, references, and desired salary. Replies will be confidential. Address BOX A6823, Air Conditioning, Heating & Refrigeration News.

SHOP FOREMAN by New England manufacturer of low temperature environmental equipment. Good commercial background and experience in handling men essential. Some knowledge of machine shop practice helpful. Company growing rapidly and makes this an excellent opportunity in a challenging branch of the industry. Replies should give complete resume of education and experience and will be held confidential. BOX A6825, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER, technical graduate or equivalent with refrigeration and sales experience. Age 23 to 36. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories for a nationally known control manufacturer. Starting Salary based on experience. Replies should contain complete resume of education and experience. All replies will be kept confidential. BOX A6829, Air Conditioning, Heating & Refrigeration News.

WHOLESALE SALESMAN — Carrier distributor, exclusively wholesale, in Northern Ohio requires an experienced salesman qualified to sell a broad line of applied, packaged and residential equipment in a Metropolitan territory with substantial sales volume. Compensation includes salary and overwrite. Submit complete resume. BOX A6830, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

WANTED — BRUNNER compressors, R10000, R20000, NR10, NR20, NR30—new or used. A. GATZ SUPPLY COMPANY, 4204 North Lincoln Avenue, Chicago 18, Illinois.

EQUIPMENT FOR SALE

WESTINGHOUSE CLS-850 (25 ton) used condensing units 3/60/440. These machines are in excellent working condition. Must sacrifice to make additional space available. AIR CON, INC., 1148 Route 22, Mountainside, New Jersey. ADams 3-5640.

SEALED SYSTEMS wiring simplified —First factual condensation of basic compressor electrical circuitry in five fundamental diagrams on one big wall chart. Covers virtually all sealed systems wiring essentials of single phase air conditioner, refrigerator, freezer or remote commercial units manufactured in United States. $1.69 or 4 for $5.75 postpaid. FRIGID EQUIPMENT CO., Dept. AH&RN, 1340 St. Stephens Road, Mobile, Alabama.

ATTIC INSTALLATION kits for 2 and 3 ton air conditioning units consisting of aluminum fiberglass duct work, ceiling outlets and return air grilles. Special closeout prices. STANDARD AIR SERVICE CO., 1225 S. Wabash, Chicago, Illinois, HA 7-4567.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

LINCOLN ELECTRIC welder, 4 cylinder, gas engine driven, trailer mounted. Excellent condition $395.00. DAN H. WILLIS COMPANY, 127 W. Market St., Akron, Ohio. Phone HE 4-6633.

ATTIC DUCTS (fiberglass with aluminum, all sizes); ceiling diffusers (square 8" x 8" ID, 4-directional adjustable); return air grilles. Sold in kits for 2, 3, and 4 h.p. unit installations; or will break up kits and sell any items any quantities. Closeout prices! BOX 51, Hempstead, New York.

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FOR SALE. Small refrigeration sales and contracting firm. All of the business that one man can handle. Possible growth if so desired. Located in northwest, within fifty miles of the best hunting and fishing in the United States. Sale price will be less than average one year net income. Sale price will include late model, well-equipped truck. BOX A6826, Air Conditioning, Heating & Refrigeration News.

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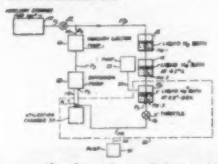
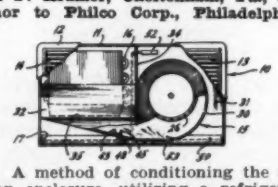
PATENTS *Week of May 2*

2,982,106. LOW TEMPERATURE REFRIGERATION APPARATUS AND PROCESS. Ernest Ambler, Bethesda, Md., assignor to the United States of America as represented by the Secretary of Commerce.



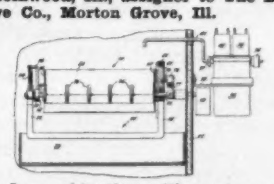
1. A method of refrigeration for producing temperatures substantially below 1° K. comprising the steps of cooling He^3 to a temperature of about 0.8°-0.9° K. by subjecting it to the cooling action of liquid He^4 boiling under reduced pressure until said He^3 is liquefied and causing the liquid He^3 to expand and evaporate.

2,982,110. AIR CONDITIONING. William F. Kramer, Cheltenham, Pa., assignor to Philco Corp., Philadelphia.



1. A method of conditioning the air of an enclosure, utilizing a refrigeration type heat pump having indoor and outdoor heat exchangers, comprising: collecting heat and moisture at the outdoor heat exchanger; heating the enclosure by circulating air from the enclosure in heat exchange relation with the indoor heat exchanger; sensing the relative humidity of the circulating air; selectively conducting moisture collected at the outdoor heat exchanger to the vincinity of the indoor heat exchanger in accordance with predetermined sensed relative humidity conditions of the circulating air; and entraining said moisture in the circulating heated air.

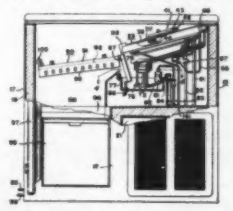
2,982,111. ICE LEVEL SENSING MECHANISM. Robert R. Dahl, Lincolnwood, Ill., assignor to The Dole Valve Co., Morton Grove, Ill.



2. In combination with an ice making assembly including a support having an ice tray pivotally mounted thereon and disposed within a freezing compartment, control means for rotating the ice tray and ejecting ice blocks therefrom, a collection tray for collecting ice blocks ejected from the ice tray, the improvement of means for operating the control means as a function of the level of the ice blocks within the collection tray comprising a sensing element. . . .

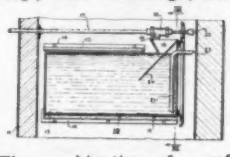
2,982,113. ICE MAKING APPARATUS. Joseph B. Pichler, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.

1. An ice maker comprising in combination, a cabinet provided with walls defining a compartment therein, a refrigerating system associated with said cabinet and including a refrigerant evaporator within said compartment, a water receptacle in said compartment, a valve means for maintaining a predetermined level of a body of water within said receptacle, a conduit



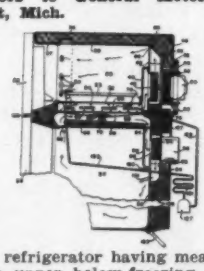
connected to said valve means and leading therefrom to a source of fresh water supply, means for pumping water out of said receptable into contact with said evaporator whereby water is frozen therein by the refrigerating effect produced thereby, a conduit connected to said pumping means and leading therefrom to a water discharge outlet in the vicinity of said evaporator. . . .

2,982,114. REFRIGERATED WATER DISPENSER. William R. Cobb, Columbus, and James K. Nelson, Grove City, Ohio, assignors to Westinghouse Electric Corp., East Pittsburgh, Pa.



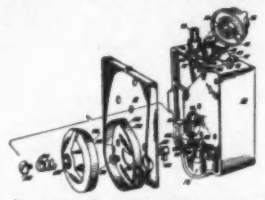
1. The combination of a refrigerator cabinet having a refrigerated chamber therein, a closed-top water storage tank disposed within said chamber, an upwardly-extending, open standpipe communicating with the interior of said tank through the top of the tank, said standpipe having a horizontal cross-sectional area substantially smaller than the horizontal area of said tank, means providing a discharge outlet for said tank at the elevation of a lower region of said standpipe, said tank being vented through said standpipe and said discharge outlet, and manually controlled means for introducing water into said tank to raise the level of the water in said standpipe above said outlet and discharge water through said outlet.

2,982,115. REFRIGERATING APPARATUS. Clifford H. Wurtz, Dayton, Ohio, John C. Miller, Livermore, Calif., and Leonard J. Mann, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich.



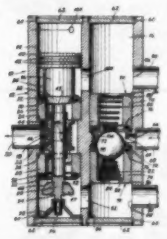
1. A refrigerator having means forming an upper below-freezing compartment and an above-freezing compartment beneath the upper compartment and a first air passageway extending from the front to the rear of said upper compartment between the bottom of the upper compartment and the top of the comparement beneath having a front inlet and a rear outlet connecting with the interior of said upper compartment to form a first air circuit, an evaporating means entirely beneath said upper compartment and entirely in said air passageway having air passages, said upper compartment having a bottom wall extending over and in heat transfer relation with said evaporating means and forming a confining wall of said first air passageway. . . .

2,982,148. CONTROL DEVICE. Wilbur F. Jackson and Theodore J. Dykzeul, Compton, Calif., assignors to Robertshow-Fulton Controls Co., Richmond, Va., a corporation of Delaware.



1. A control actuating mechanism comprising a cover member having an aperture therein, a rotatable stem having a portion projecting through said aperture, stop means on said cover including an annular disc surrounding said projecting stem portion and having a stop element formed thereon, a rotatable dial secured to said projecting stem portion and having a stop element thereon coacting with said stop element on said disc to establish limit positions for rotation of said stem. . . .

2,982,303. FOUR-WAY REVERSE CYCLE VALVE. Irvin E. Wiegers, St. Louis, Mo., assignor to Alco Valve Co., St. Louis, Mo.

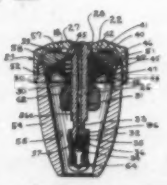


1. A four-way reverse cycle comprising, in combination, a main valve body having a high pressure chamber provided with an inlet port, a source of high pressure fluid communicating with the inlet port, a low pressure chamber provided with an outlet port, the valve body including a pressure housing, first means in the body for communicating the pressure housing with the low pressure chamber including a first valve seat, a movable wall in the housing with a first space between one side of the wall and the valve seat and a second space on the other side of the wall. . . .

2,982,312. TUBING AND METHOD OF MAKING COATED TUBING. Isadore Caplan, Bernard E. Frank, and Gerard T. Rufin, Rochester, N. Y., and Robert P. Thomson, Grosse Pointe Woods, Mich., assignors to General Motors Corp., Detroit, Mich.

1. A method of coating the interior of steel tubing with an adherent, uniform alloy coating during formation of said tubing from a steel strip, said method comprising the steps of longitudinally moving a substantially flat steel strip while continuously transversely bending it into a tubular configuration having abutting edges forming a seam, introducing an alloy containing aluminum and zinc into the interior of the tubing, after it is completely formed heating the tubing to a degree sufficient to vaporize said alloy within the tubing and thereafter cooling the tubing sufficiently to cause said alloy to solidify so as to form a smooth and ductile alloy coating on the interior of the tubing.

2,982,446. SODA FOUNTAIN BEVERAGE DISPENSER. Leo Liolios and Harlow E. Allshouse, Chicago, Ill., assignors to The Bastian-Blessing Co., Chicago, Ill.



1. In a draft arm nozzle, a syrup check operable in a flow of liquid and comprising a resilient sleeve, a pair of downwardly arched lips normally self-compressed in contact with each other over a substantial area to maintain a condition of moisture between them without leakage, said lips having an external convex line of configuration externally washed by said liquid and relatively planar area of mutual contact terminating in an internal line of configuration spaced from the convex line of configuration opening into said sleeve to define a delta-shaped slot between said lines whose widest separation is substantially the depth of convexity of said external convex line of configuration portion. . . .

2,982,511. PRESSURE-OPERATED CONTROL VALVE. Douglas M. Connor, Hillcrest Road, Watchung, N. J.

1. In combination, a pair of axially aligned, spaced, open-ended rigid conduits, a pair of concentrically ar-

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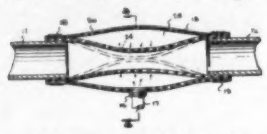
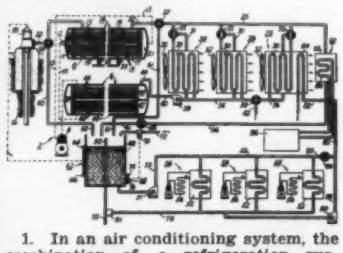
ranged flexible sleeve members of generally circular normal cross section disposed between said rigid conduits and receiving the open ends of said rigid conduits thereon, the outer sleeve member normally closely enveloping the inner sleeve member, means sealingly clamping the end portions of said sleeve members on said rigid con-



duits, said sleeve members being made of resilient deformable material and being both adapted to deform responsive to pressure differential between the fluids in the space between the sleeve members and the interior of the inner sleeve member. . . .

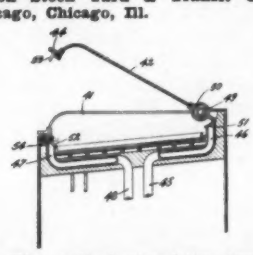
2,982,523. AIR CONDITIONING SYSTEM. Alden I. McFarlan, 691 Dorian Road, Westfield, N. J.



1. In an air conditioning system, the combination of, a refrigeration system including an evaporator and a condenser, means to direct a primary system of water through said evaporator thereby to cool the water, heat transfer means connected to pass the primary stream of water into heat exchange relationship with air to be conditioned, auxiliary heating means in heat exchange relation to the air to be conditioned, means to pass the primary stream of water through said condenser thereby to condense the refrigerant and heat the stream of water and thence through said auxiliary heating means to reheat the air means including conduits and a pump to direct water from said primary stream through said heat transfer means and condenser in a closed circuit whereby it constitutes a second-mentioned stream of water. . . .

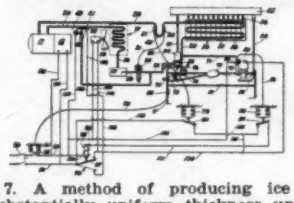
Week of May 9

2,983,108. SELF-SERVICE DISPLAY COUNTER. Willard Langdon Morrison, Lake Forest, Ill., assignor to The Union Stock Yard & Transit Co. of Chicago, Chicago, Ill.



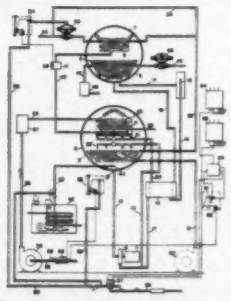
6. The method of refrigerating and storing perishable material comprising the steps of positioning the material upon the supporting surface of highly thermal conductivity within a normally closed chamber, circulating cold air in a substantially saturated state through the chamber to refrigerate the space in which the material is located. . . .

2,983,109. ICE MAKING MACHINE. Meldon G. Leeson, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corp., Chicago, Ill.



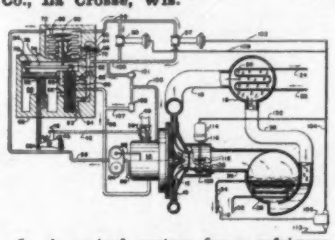
7. A method of producing ice of substantially uniform thickness under varying operating conditions comprising the stpes of flowing water to be frozen over a surface; refrigerating the surface to freeze the water thereon; flowing water through a control tube to be frozen therein; refrigerating said control tube; and utilizing water diverted from said tube by the restriction to flow therethrough to terminate the freezing operation on said surface.

2,983,110. ABSORPTION REFRIGERATION SYSTEMS. Louis H. Leonard, Jr., East Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



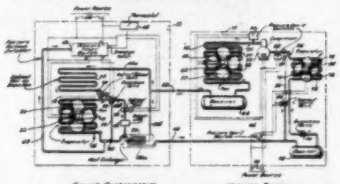
11. In the method of operation of an absorption refrigeration system including a generator, a condenser, a shell containing an absorber and an evaporator having a heat exchanger member through which medium to be cooled passes, the steps which consist in supplying liquid refrigerant to the evaporator, supplying strong solution to the absorber, and discharging the strong solution directly against the bottom of the evaporator to heat liquid refrigerant in the evaporator thereby urging the refrigerant in heat exchange relation with medium to be cooled passing through the evaporator.

2,983,111. REFRIGERATION MACHINE AND METHOD OF CONTROLLING SAME. Robert G. Miner, La Crosse, and Joseph R. Lejk, Onalaska, Wis., assignors to The Trane Co., La Crosse, Wis.



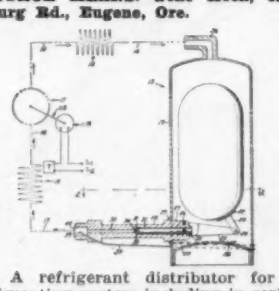
1. A control system for a refrigeration machine having a centrifugal compressor, a condenser connected to receive compressed refrigerant from said compressor, an evaporator for removing heat from a heat exchange fluid, said evaporator being connected to said condenser to receive condensed refrigerant from said condenser, conduit for conducting refrigerant from said evaporator to said compressor, means for throttling the flow of refrigerant to said compressor. . . .

2,983,112. REFRIGERATING APPARATUS. Joseph R. Batteiger, 440 Seaton St., Los Angeles 13, Calif.



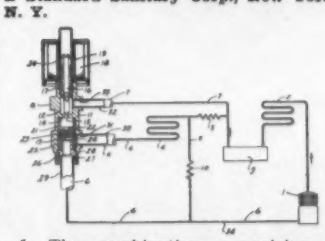
1. Refrigerating apparatus including in combination: a compressor for raising the pressure of a gaseous refrigerant; a condenser for cooling the refrigerant from said compressor to its liquid phase; a receiver for accumulating liquid refrigerant from said condenser; an evaporator; first conduit means for interconnecting the outlet of said compressor to said condenser, second conduit means for interconnecting said condenser to said receiver, third conduit means for interconnecting said receiver with the inlet of said evaporator. . . .

2,983,113. REFRIGERANT FLOW CONTROL MEANS. Gene Koch, 3800 Coburg Rd., Eugene, Ore.



1. A refrigerant distributor for a refrigerating system including in series connection an evaporator, a compressor and a condenser, said distributor being adapted for connection between said condenser and said evaporator to close said series circuit, said distributor comprising: means forming a high pressure float chamber with a refrigerant inlet formed through an upper wall thereof for receiving refrigerant from said condenser; a first refrigerant outlet means formed through a lower wall of said chamber for passing liquid refrigerant from said chamber to said evaporator. . . .

2,983,114. REFRIGERATING SYSTEM AND VALVE CONSTRUCTION. Thomas Edmund Noakes, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corp., New York, N. Y.



1. The combination comprising a housing structure having a movable wall therein subdividing the structure into two separate chambers; a first line adapted to feed high pressure fluid into one of the chambers; valve means opening and closing the line to control the application of high pressure fluid into said one chamber; a second line normally feeding low pressure fluid into the other of said chambers; a third line normally receiving low pressure fluid from the other chamber; a valve element operated by the movable wall to close off the third line from the other chamber in response to the admission of high pressure fluid into said one chamber; and a passageway between said one chamber and the second line; whereby when the valve means is open the high pressure fluid is enable to (1) flow into said one chamber, (2) force the valve element to a position closing the third line, and (3) flow from said one chamber into the second line; and whereby when the valve means is closed the low pressure fluid from the second line is enabled to flow into the other chamber and thence into the third line.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

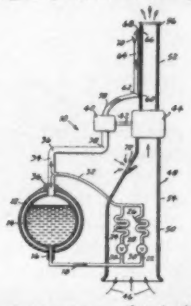
2,983,115. HEAT TRANSFER DEVICE WITH CONDENSATE DRAINAGE MEANS. Howard E. Caswell, East Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.

Heat transfer apparatus for exchanging heat between a first condensible gaseous medium and a second medium comprising conduit means forming a confined path for the flow of the second medium, extended surface means associated with said first means and forming therewith a condensate collection surface subject to flow of gaseous medium thereover, said extended surface means being provided with notches arranged in a predetermined pattern and a trough assembled within a portion of the extended surface means defining each notch so as to define a space therewith for the uninterrupted passage of condensate, draining from the collection surface, through the trough.

2,983,116. AIR CONDITIONING UNIT. Jerzy Makowski, Torrance, Calif., and Gerald Dennehy, Setauket, N. Y., assignors to Fairchild Engine & Airplane Corp., Hagerstown, Md.

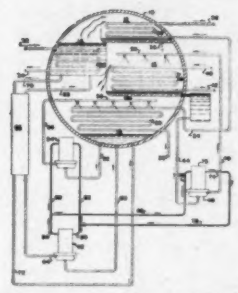
1. An air conditioning unit comprising a container for liquefied gas, an evaporating coil coupled to opposite

rated in said coil through an expander, sides of said container, means for diverting a portion of the gas evapo-



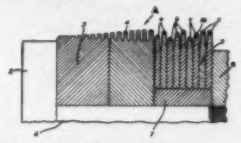
and a compressor mechanically coupled to said expander for drawing ambient air through said compressor over said evaporating coil.

2,983,117. ABSORPTION REFRIGERATING SYSTEM. Per Edberg and Edward M. Stubblefield, La Crosse, Wis., assignors to The Trane Co., La Crosse, Wis.



3. In an absorption refrigerating system, the combination of an absorber, an evaporator, a generator and a condenser, a first pump for circulating refrigerant in said evaporator, a second pump for pumping absorbent from said absorber to said generator, a motor having a shaft connected to and driving said second pump and means for conducting refrigerant from the discharge side of said first pump through said motor. . . .

2,983,168. MEANS FOR PRODUCING INTEGRAL PINNED TUBING. William Henry Laban, West Hagley, England, assignor to Accles & Pollock Ltd., Birmingham, England.



3. Means for developing a helical fin on a tube, said means comprising a plurality of roll units adapted to be spaced around the tube, each unit including a fin-finishing portion consisting of a plurality of adjacently-disposed and independently rotatable loose discs divided into groups, each disc having an outer annular portion of wedge-section, adjacent groups of said discs having annular portions of different wedge angle, annular portions in one group having a larger wedge angle than annular portions of a preceding group. . . .

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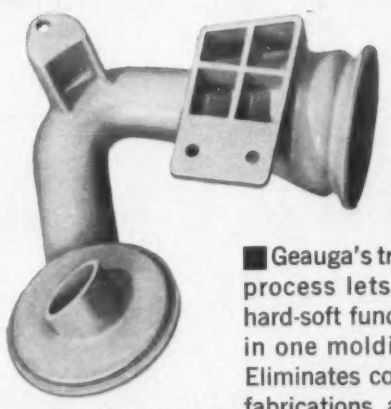

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Excise Tax--

(Continued from Page 1, Col. 5)

on Dec. 18, 1959 sent a memorandum to the IRS supporting G-E's contentions.

Now, nearly 20 months after these submissions, G-E has been informed by Bernard Fischgreund, chief of the Tax Ruling Div. of IRS, that units of the type submitted for checking by G-E would be taxable, presumably because they are "self-contained" and "suitable for direct delivery without use of ducts."

No matter whether such units are sent out with a plenum box or diffuser, or are applied with ductwork in the field, the tax would be collected at the source of manufacture, it was indicated.

However, it has been indicated that the IRS will give G-E an opportunity to submit a petition for reconsideration of the ruling before it is published in the Internal Revenue Dept. bulletin. Once published in the bulletin, it becomes effective immediately.

Also, the Tax Committee of ARI will meet Aug. 17 to consider the problem. In addition to the committee, the meeting is open to any ARI member.

Close observers of the tax situation feel that such a ruling would be unfair in many respects.

They feel that it is a departure from the original intent of Congress in imposing the tax (which to all intents and in all previous interpretations was limited to room air conditioners).

They also feel that it would be a prime example of "government by administrative fiat" rather than through the will of elected representatives.

Imposition of the tax on such units on a retroactive basis after withholding a decision for so long would also be unfair and work hardships, it is pointed out.

The tax could not be applied to split systems and water-cooled units, but it could hit a great many air conditioners in larger sizes sold and applied—almost always with duct systems—in attic and roof-top and installations of that nature. One industry authority estimates 50,000 units might be affected.

Arkla Plans--

(Continued from Page 1, Col. 1)

The company president indicated that the price changes have been made possible by a continuous program of manufacturing cost studies at the Evansville plant, which Arkla acquired from Servel in 1957.

"At the time of the Servel purchase, Arkla arbitrarily cut prices on gas air conditioning below those previously set by Servel.

"Since that time, despite steady increases in the cost of manufacturing, Arkla has steadily reduced prices. The reduction announced for Aug. 4 makes our Sun Valley air conditioning prices 27% less than they were in 1957," explained Stephens.

"We take extreme pride in announcing this price reduction to the industry, believing it to be an important stride forward in enabling the entire industry to establish itself firmly in the field of single-unit central heating and cooling," he concluded.

1961 Housing Act--

(Continued from Page 1, Col. 4)

terest rate of 6%.

Intent was to make it easier for homeowners to modernize homes that are in need of it, specifically those homes 10 years old or older. Among these homes, there is no question in Rep. Rains' mind that installation of eligible heating and air conditioning systems (those that become part of the realty) would qualify for easier terms.

The Act also says that homes constructed less than 10 years ago can qualify for these Title II home improvement loans if the proceeds of the loan are used primarily for major structural improvements or to correct defects.

"In my opinion," he said, "the installation of heating or air conditioning alone would not be considered a major structural improvement and would not be eligible for this type loan.

"However, if the homeowner coupled such installation with a structural improvement, such as adding on another room, it could qualify.

"You must remember," he added, "that Title I loans of up to $3,500 with up to five years to repay are still available. Eligible heating and air conditioning systems can qualify for Title I loans."

Rep. Rains pointed out that, while this is the legislative intent of the Act, administrative decisions on how it is to be applied are still to be made by the Federal Housing Administration.

It was indicated here that such decisions are just now filtering down to field offices. No interpretations have been made public yet.

Fallout Shelters--

(Continued from Page 1, Col. 3)

the minimum amount of the loans has been set at $1,000 and in other areas the minimum is $2,500. The loans are to be used to improve the basic livability of dwelling units.

The shelters could be part of the over-all rehabilitation of a home or could qualify as a basic improvement. They could serve in a dual role as laundry rooms, dark rooms, studies, etc., but will have to conform to standards of the Office of Civil Defense Mobilization and the FHA, who would make the inspections of construction.

Fallout shelters have been for some time authorized under the Title I property improvement program of FHA. That program provides for maximum insurance of $3,500, maximum five years.

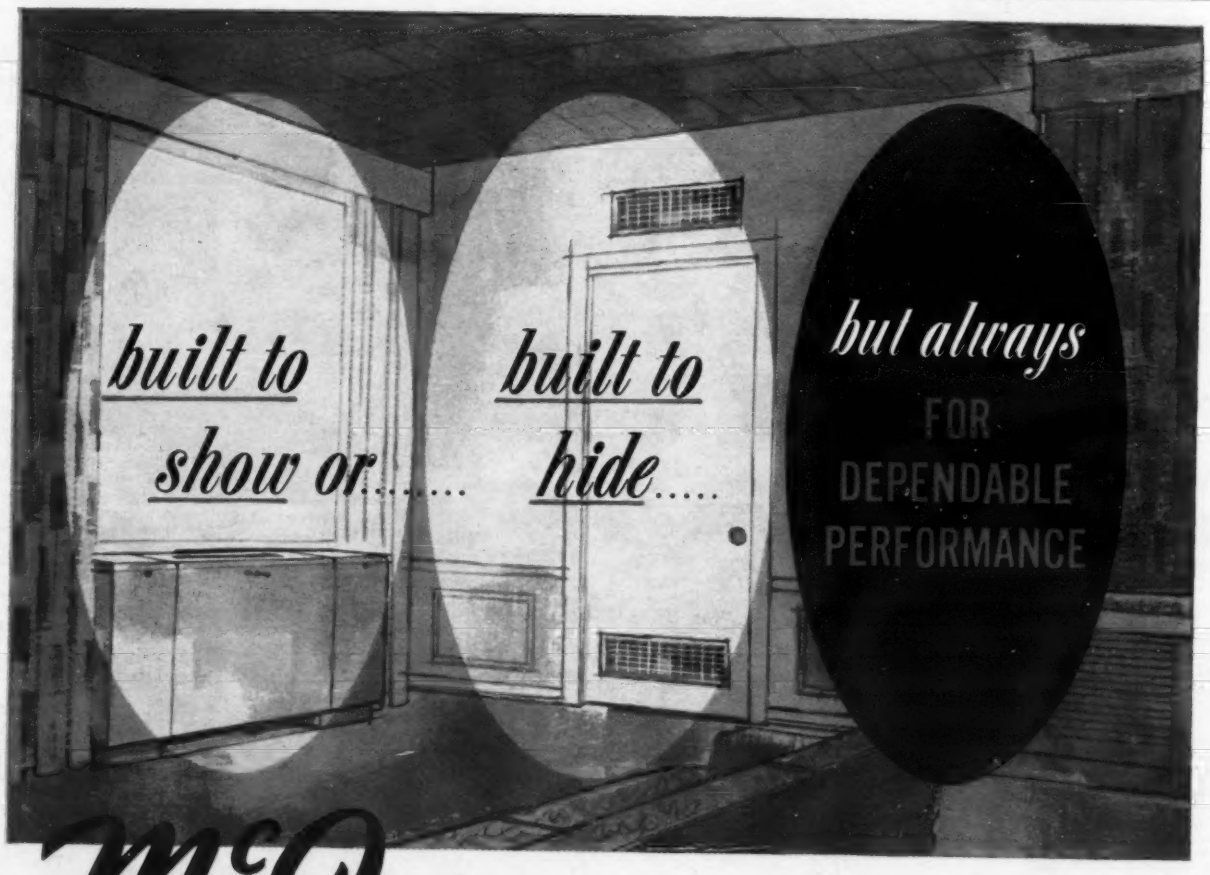
Robert K. Moss Forms Consulting Organization

NORTHBROOK, Ill.—Robert K. Moss, professional engineer and member of the American Society of Heating, Refrigerating & Air-Conditioning Engineers, announced the formation of a new consulting organization to be known as Robert K. Moss, Consultants.

The company headquarters and offices are being located at 2252 Dehne road, here.

Moss, formerly vice president of the Dell Corp., of Morton Grove, Ill., has had over 15 years of theoretical and practical experience in the field of heating and air conditioning.

The company will render consultation services to architects and contractors.



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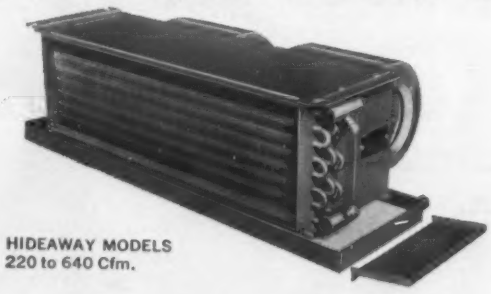

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